CONTRIBUTIONS

TO

VITAL STATISTICS

By F. G. P. NEISON, F.L.S. &c.

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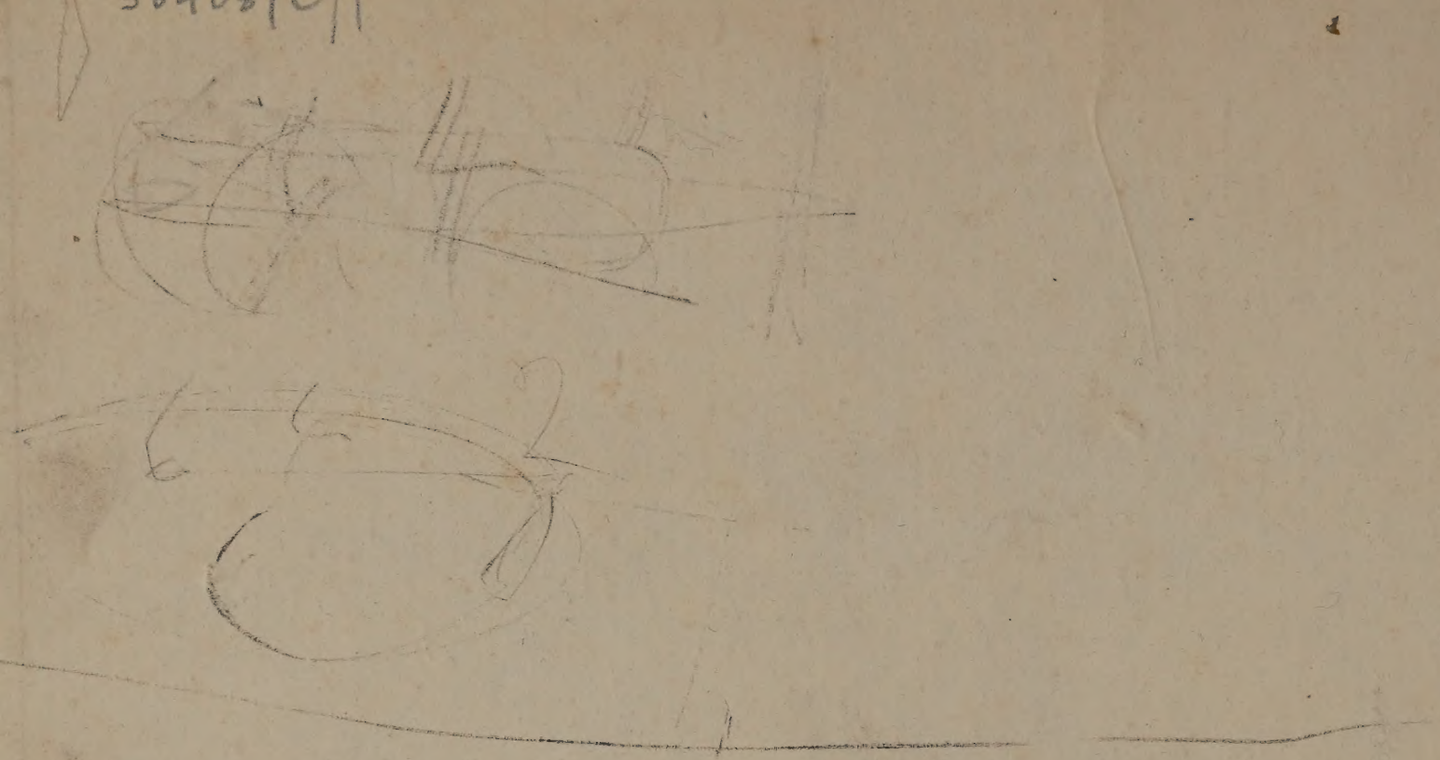

CONTRIBUTIONS

TO

VITAL STATISTICS:

BEING A DEVELOPEMENT OF

THE RATE OF MORTALITY AND THE LAWS OF SICKNESS;

From Original and Extensive Data procured from Friendly Societies,

SHOWING THE INSTABILITY OF FRIENDLY SOCIETIES, "ODD FELLOWS,"
"RECHABITES," &c.

WITH

AN INQUIRY INTO THE INFLUENCE OF LOCALITY ON HEALTH.

BY

F. G. P. NEISON, F.L.S., &c.

ACTUARY TO THE MEDICAL INVALID AND GENERAL LIFE OFFICE.

READ BEFORE THE STATISTICAL SOCIETY, MARCH 17, 1845.

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PREFACE.

ALL that has been aimed at in the following pages is to give a clear exposition of the Laws of Sickness and Mortality, as developed by the data set forth in the present paper; and every thing like a discussion of the general principles of Vital Statistics has been purposely avoided.

One of the objects in view was to determine the actual liabilities of Friendly Societies by the results of their own experience; but it is obvious that the same data will satisfy other useful and practical purposes, as well as questions of a more curious and speculative character. Although enough has been shown, in reference to the Health of Towns, and the Influence of Locality on the Duration of Life, to point out the fallacious conclusions recently arrived at by some writers, still the precise Influence of Locality cannot be measured till the value of life in the various trades, occupations, and ranks of society have been determined. This, and some other points of interest, have been under observation, and may probably be published on a future occasion.

Medical Invalid and General Life Office,
25 *Pall Mall, June* 1845.

CONTENTS.

DURATION OF LIFE IN ENGLAND AND WALES . . . . . 1—12

TABLE A.—Corrected Enumeration of the Population of England and Wales for 1821 and 1841; with the annual rate of Increase during the intermediate period 2

TABLE B.—Total of the Populations, as calculated for the 31st December, in the years 1838, 1839, 1840 and 30th June, 1841; with the sum of the corrected Deaths for the corresponding years, as given in the 2nd, 3rd, 4th and 5th Reports of the Registrar General, and the Mortality per cent., during that period 4

TABLE C.—England and Wales—Living—Dying—Mortality per cent., and Specific Intensity . . 5, 6

TABLE D.—England and Wales—Expectation of whole Population 8

DURATION OF LIFE IN VARIOUS CLASSES . . . . . 13—62

TABLE E.—Trades not Classified—Rural, Town and City Districts—Males—Population—Deaths and Sickness . 16—23

TABLE F.—Trades not Classified—Rural, Town and City Districts—Males—Living, Dying, Mortality per cent., and Specific Intensity . . . . . 25—28

TABLE G.—Trades not Classified—Rural, Town and City Districts—Males—Expectation . . . 32

TABLE H.—Expectation of Life—Friendly Societies—Females (Rural, Town and City Districts)—Males (Liverpool)—Peerage—Friendly Societies—16 Trades Rural Districts—Males, Life Assurance Offices—Males, Aggregate—Government Males 36, 37

TABLE I.—Rural Districts—Labourers—Males—Living, Dying, Mortality per cent., and Specific Intensity . 43

No. 2.—Rural, Town and City Districts—Males—Living, Dying—Mortality per cent., and Specific Intensity—Clerks 44

No. 3. „ Plumbers Painters and Glaziers 45

No. 4. „ Bakers 46

No. 5. „ Miners 47

No. 6. „ Residue, by abstracting Labourers from Rural Districts 48

DURATION OF LIFE (*continued.*)

TABLE J.—Expectation of Life—Labourers (Rural Districts)—Clerks (Rural Districts, Towns and Cities)—Plumbers Painters and Glaziers (Rural Districts, Towns and Cities)—Bakers (Rural Districts, Towns and Cities)—Miners (Rural Districts, Towns and Cities)—Rural Districts, after abstracting Labourers 50, 51
TABLE K.—Trades not Classified—Males (Rural Districts, Towns and Cities)—Females—Living, Dying, Mortality per cent., and Specific Intensity 57
No. 2.—Trades not Classified—Liverpool—Males—Living, Dying, Mortality per cent., and Specific Intensity 58

DURATION OF LIFE IN SCOTLAND . . . . . 63—90

TABLE L.—Trades not Classified—Rural, Town and City Districts—Population—Deaths—Sickness . . 64—71
TABLE M.—Rural, Town and City Districts—Living, Dying, Mortality per cent., and Specific Intensity . 73—76
TABLE N.—Expectation—Rural, Town and City Districts 77
TABLE O.—Population of Glasgow for 1831 and 1841, with the Annual Rate of Increase during the intermediate period 79
TABLE P.—Glasgow—Total of the Population, as calculated for the 30th June in each of the years 1832—1841 inclusive; with the Sum of the Deaths for the corresponding years, as given in the Mortality Bills, and the Mortality per cent. during the same period 97
TABLE Q.—Glasgow—Males and Females—Living, Dying, Mortality per cent., and Specific Intensity . . 80, 81
TABLE R.—Expectation—Glasgow and Dundee—Males and Females 83
TABLE S.—Dundee—Total of the Populations as calculated for the 30th of June in each of the years 1835—1844 inclusive, with the sum of the deaths for the corresponding years, as given in the Mortality Bills, and the Mortality per cent. during the same period 85
TABLE T.—Trades not Classified—Dundee—Males and Females—Living, Dying, Mortality per Cent., and Specific Intensity 87, 88
TABLE U.—Equation and Expectation of Life, England and Wales—Scotland—and Trades in Friendly Societies (Males) England 89, 90

INFLUENCE OF LOCALITY ON SICKNESS . . . . . 91—110

TABLE V.—England and Wales, and Scotland—Rural, Town, and City Districts—Average Sickness per Annum to each Person at different Ages 92
Abstract of Table V. 93
Table of Sickness per Annum to each Person, expressed in weeks, as given by Highland Society, Ansell, and Table V 96
Table of Comparative Amount of Sickness in various periods of years, according to the Sickness Tables of the Highland Society, Ansell, and the Results of this Inquiry 98
Abstract of the Sickness experienced in the Edinburgh Compositors' Society 100
Members of Friendly Societies—Tables of the per-centage of Sick Members during each year—Ratio of Sick Members to every 100 not Sick in every year—Mortality per Cent. among those actually Sick—Sickness per annum among those actually Sick—Total Amount of Sickness to each Death . 105

RATES AND CONTRIBUTIONS OF FRIENDLY SOCIETIES . . . . . 111—139

TABLE—Value of Annuities—Three per Cent.—Friendly Societies—Males 112
„ Value of Deferred Annuities to commence at age 70—Three per Cent.—Friendly Societies—Males . 113
„ Value of Temporary Annuities to continue till age 70—Three per Cent.—Friendly Societies—Males . 114
„ Single Premium for Sum at Death—Three per Cent.—Friendly Societies—Males . . . 115
„ Annual Premium for Sum at Death—Three per Cent—Friendly Societies—Males . . . 116

RATES AND CONTRIBUTIONS OF FRIENDLY SOCIETIES (*continued*)

TABLE—Temporary Annual Premium to continue till age 70 for Sum at Death—Three per Cent.—Friendly Societies—Males 117
„ Probability of Living one year—Friendly Societies—Males 118
„ Probability of Dying in one year—Friendly Societies—Males 119
„ Single Premium for Sickness—Three per Cent.—Friendly Societies—Males 120
„ Temporary Annual Premium, for Sickness, to continue till age 70—Three per Cent.—Friendly Societies—Males 121
„ Annual Premium—Sickness—Highland Society—Ansell's Results—England and Wales, and Scotland—Rural, Town, and City Districts 122
„ Value of Annuities—Single Premium for Sum at Death—Annual Premium for Sum at Death . . 123

APPENDIX . . . . . 140—144

NOTE I. TABLES—Expectation of Life—Carlisle—Tontine Nominees—France—Equitable Office—Amicable Office—Sweden and Finland—Montpellier—Northampton 140
Note II.—List of Places comprised under the heads "Rural Districts," "Towns," and "Cities," in England and Wales . . . . . 141—143
Note III.—Same in Scotland 144

DURATION OF LIFE IN ENGLAND AND WALES.

The best record of the General Mortality in England and Wales is contained in the Annual Reports of the Registrar General. So far as relates to the number of deaths in the entire community, more complete returns could not be hoped for.

The 5th Report of the Registrar General contains a table of the Expectation of Life, calculated on the mortality of the year 1841. The census of the population having been taken in that year, offered a ready means to determine the value of life for that period; but as the results of the mortality for several years would undoubtedly form a broader and more satisfactory basis on which to found a measure of the duration of life in this country, it is proposed to calculate a table on the 2nd, 3rd, 4th, and 5th Reports of the Registrar General; omitting the 1st Report, that any imperfections incidental to the early management of the Registers may be avoided. It is evidently necessary to ascertain the exact amount of population living at various ages in the country, during the periods of time to which the returns of deaths relate, before results can be obtained, showing the ratio of the population dying at the respective ages.

Previous to the population being calculated for the mean time of each period embraced in the 2nd, 3rd, 4th, and 5th Reports, it will be necessary to apply a correction to the enumeration of the population at the period of the Census.

In 1841, the ages of 35,408 males and 11,472 females, or ·456 per cent. of the one, and ·141 per cent. of the other, were not given. In the registration of deaths, the ages of a certain proportion are also omitted; and if the ratio were the same in both cases, those whose ages were not specified might be left out, as the omission of the one would be corrected by the omission of the other; but it happens that, in the returns of deaths over the entire four years referred to, the number of males whose ages were not specified was only 1,650, or ·235 per cent. of the whole; and of females 896, or only ·132

per cent. of the whole female deaths. Independent corrections will, therefore, have to be applied to each class of results, namely :

Let y + log. x = log. of the actual number alive at the period of life x, provided the age of every person had been ascertained.

y = log. b — log. a.
a = population whose ages were ascertained ;
b = total population, and
x = the number enumerated at any particular period of life.

This correction having been applied to the census of the population in 1841, and also to the census in 1821, the results obtained form the 2nd, 3rd, 5th, and 6th columns of Table A.

Table A.

Corrected Enumeration of the Population of England and Wales for 1821 and 1841 ; with the Annual Rate of Increase during the Intermediate Period.

Ages.	MALES.			FEMALES.			Ages.
	Population 1821.	Population 1841.	Annual Rate of Increase.	Population 1821.	Population 1841.	Annual Rate of Increase.	
Under 5	898324	1047502	1·007711	884866	1057926	1·00897	Under 5
5 — 10	787426	952437	1·00955	779516	951687	1·01002	5 — 10
10 — 15	685011	879732	1·01258	650342	851649	1·01357	10 — 15
15 — 20	578304	780967	1·01513	611741	805090	1·01382	15 — 20
20 — 30	857697	1333088	1·02229	1029526	1498751	1·01895	20 — 30
30 — 40	673718	999000	1·01989	741881	1051505	1·01759	30 — 40
40 — 50	547372	748487	1·01577	572227	777500	1·01544	40 — 50
50 — 60	388351	496475	1·01235	402245	529274	1·01381	50 — 60
60 — 70	262728	329563	1·01039	284624	369498	1·01313	60 — 70
70 — 80	130544	159551	1·01008	142366	184468	1·01303	70 — 80
80 — 90	33577	41224	1·01031	41480	53164	1·01248	80 — 90
90 —100	2556	2986	1·00776	3747	4967	1·01420	90 —100
100 and upwards	68	82	1·00956	148	167	1·00628	100 and upwards
Total	5845676	7771094	1·01415	6144709	8135647	1·01530	Total.

The 2nd, 3rd, and 4th Reports of the Registrar General gave the number of deaths in the year preceding the 30th June 1839, 1840, and 1841 respectively ; and the 5th Report gave the deaths for the year ending 31st December 1841. The next step required was to determine the population alive at various ages for the mean time of each of the given periods, that is, the population at the various terms of life in England and Wales on the 31st of December 1838, 1839, 1840, and 30th June 1841 ; and the following method was employed :

Let β = the corrected population at a given age on the day of the Census in 1821;
π = the same for 1841;
θ = the period elapsed since 1841.

Log. $\pi \pm \left(\frac{\log. \pi - \log. \beta}{20}\right) \theta$ = log. of the population at the given term of life for the mean time of the period required.

The population for each of the periods being obtained in this manner for every term of life, the combined results form columns 2nd and 5th of TABLE B.

It might have been deemed sufficient to have made the expression $\frac{\text{Log. } \pi - \log. \beta}{20}$ represent the rate of increase on the general population for all ages; but a glance at columns 4 and 7 of TABLE A will shew the necessity of obtaining an independent value to this expression for each term of life; for, by adopting $\frac{\text{Log. } \pi - \log. \beta}{20}$ as the rate of increase for every term of life, it would have produced a difference in the male population at ages 20 to 30 of 42108 in TABLE B, or, in other words, an apparent decrease of mortality at that term of life; and consequently, at some other terms, opposite errors in the results would be produced.

Corrections, precisely similar to those applied to the enumeration of the population, were made on the registration of deaths; and the final results for the four years referred to are given in columns 3rd and 6th of TABLE B.

It may be observed here, that as the deaths happening in the last half of the year forming the fourth period of the Registrar General, and those taking place in the first half of the year forming his fifth period, are identical, they will of course be included twice in the results now referred to; but as the population has also been taken for the mean of both periods or years, the proper relation is maintained between the population and deaths.

The preceding step was rendered necessary, from the Registrar General having changed the period for his Annual Report from the 30th June to the 31st December, without having, at the time of making the change, distinguished the deaths belonging to each half year.

All the preceding corrections having been applied to the population and deaths, the combined results form TABLE B, the 4th and 7th columns of which show the mortality per cent. at the various terms of life for each sex in England and Wales during the four years referred to, and under that form constitute a complete measure of the value of life, during the same period, in the general population of this country.

Table B.

England and Wales.—Total of the Populations as calculated for the 31st December in the years 1838, 1839, 1840, and 30th June 1841; with the Sum of the Corrected Deaths for the corresponding years as given in the 2nd, 3rd, 4th, and 5th Reports of the Registrar General; and the Mortality per cent. during that period.

Ages.	MALES.			FEMALES.			Ages.
	Population.	Deaths.	Mortality per Cent.	Population.	Deaths.	Mortality per Cent.	
Under 5	4156265	292968	7·048	4192129	254170	6·063	Under 5
5 — 10	3771901	36588	·970	3767019	35494	·942	5 — 10
10 — 15	3473008	18199	·524	3358717	19175	·570	10 — 15
15 — 20	3075023	22464	·730	3174272	26003	·819	15 — 20
20 — 30	5210180	50765	·974	5878257	56298	·957	20 — 30
30 — 40	3914433	43451	1·110	4129820	47174	1·142	30 — 40
40 — 50	2945219	42770	1·452	3060397	40781	1·332	40 — 50
50 — 60	1960445	44196	2·254	2086819	40593	1·944	50 — 60
60 — 70	1302647	55491	4·259	1457878	54414	3·732	60 — 70
70 — 80	631509	57449	9·097	727904	60229	8·274	70 — 80
80 — 90	163089	32461	19·904	209902	38064	18·134	80 — 90
90 —100	11846	4282	36·316	19568	6650	33.984	90 —100
100 and upward	325	137	42·154	662	311	47·277	100 and upward.
Total	30615890	701221	2·290	32063344	679356	2·119	Total

The results now described in columns 4th and 7th of Table B, were made to represent the rate of mortality at the mean age of that period of life opposite to which they are placed; intermediate terms were then found by the method of third differences, and the whole was subsequently corrected as follows:

Let A_1 represent the first term;
A_2 „ second;
A_3 „ third;
A_n „ the n term; then

$$\frac{A_1 + A_2 + A_3 + A_4 + A_5}{5} = A_3$$

$$\frac{A_2 + A_3 + A_4 + A_5 + A_6}{5} = A_4 \quad \text{And}$$

$$\frac{A_{n-4} + A_{n-3} + A_{n-2} + A_{n-1} + A_n}{5} = A_{n-2}$$

The adjusted results thus obtained form columns 4 and 9 of Table C, and may be considered a fair expression of the rate of mortality at the respective ages opposite to which they are placed in the Table. Columns 2nd and 3rd, 7th and 8th in the same Table,

[show

Table C.

England and Wales.

Ages.	MALES,				Age.	FEMALES.				Ages.
	Living.	Dying.	Mortality per Cent.	Specific Intensity.		Living.	Dying.	Mortality per Cent.	Specific Intensity.	
10	100000	791	·791	126·422	10	100000	792	·792	126·262	10
11	99209	696	·702	142·501	11	99208	712	·718	139·276	11
12	98513	624	·633	157·978	12	98496	653	·663	150·830	12
13	97889	576	·588	170·068	13	97843	618	·632	158·223	13
14	97313	554	·570	175·439	14	97225	610	·627	159·490	14
15	96759	562	·581	172·117	15	96615	627	·649	154·583	15
16	96197	598	·622	160·772	16	95988	671	·699	143·061	16
17	95599	635	·665	150·376	17	95317	710	·745	134·228	17
18	94964	673	·709	141·044	18	94607	744	·786	127·226	18
19	94291	706	·749	133·511	19	93863	769	·819	122·100	19
20	93585	734	·784	127·551	20	93094	786	·844	118·483	20
21	92851	757	·815	122·699	21	92308	794	·860	116·279	21
22	92094	779	·845	118·343	22	91514	804	·879	113·766	22
23	91315	800	·876	114·155	23	90710	815	·899	111·235	23
24	90515	822	·908	110·132	24	89895	825	·918	108·932	24
25	89693	840	·936	106·838	25	89070	835	·938	106·610	25
26	88853	853	·960	104·167	26	88235	845	·958	104·384	26
27	88000	863	·981	101·937	27	87390	854	·977	102·354	27
28	87137	870	·998	100·200	28	86536	863	·997	100·301	28
29	86267	872	1·011	98·912	29	85673	870	1·016	98·425	29
30	85395	874	1·023	97·752	30	84803	878	1·035	96·618	30
31	84521	876	1·036	96·525	31	83925	884	1·053	94·967	31
32	83645	877	1·049	95·329	32	83041	891	1·073	93·197	32
33	82768	880	1·063	94·073	33	82150	895	1·089	91·827	33
34	81888	883	1·078	92·764	34	81255	900	1·107	90·334	34
35	81005	887	1·095	91·324	35	80355	902	1·123	89·047	35
36	80118	892	1·113	89·847	36	79453	904	1·138	87·873	36
37	79226	898	1·134	88·183	37	78549	906	1·153	86·730	37
38	78328	906	1·157	86·430	38	77643	906	1·167	85·690	38
39	77422	917	1·184	84·460	39	76737	906	1·181	84·674	39
40	76505	927	1·212	82·508	40	75831	906	1·194	83·752	40
41	75578	941	1·245	80·321	41	74925	908	1·212	82·508	41
42	74637	954	1·279	78·186	42	74017	911	1·231	81·235	42
43	73683	972	1·319	75·815	43	73106	916	1·253	79·808	43
44	72711	990	1·361	73·475	44	72190	923	1·277	78·309	44
45	71721	1009	1·407	71·073	45	71269	931	1·307	76·511	45
46	70712	1028	1·454	68·776	46	70336	940	1·337	74·794	46
47	69684	1049	1·506	66·401	47	69396	953	1·373	72·833	47
48	68635	1070	1·560	64·103	48	68443	966	1·411	70·872	48
49	67565	1096	1·621	61·690	49	67477	982	1·455	68·728	49
50	66469	1120	1·685	59·347	50	66495	999	1·503	66·534	50
51	65349	1151	1·761	56·786	51	65496	1020	1·558	64·185	51
52	64198	1182	1·842	54·289	52	64476	1043	1·617	61·843	52
53	63016	1219	1·935	51·680	53	63433	1072	1·690	59·172	53
54	61797	1257	2·035	49·140	54	62361	1102	1·768	56·561	54
55	60540	1299	2·146	46·598	55	61259	1143	1·866	53·591	55
56	59241	1339	2·261	44·228	56	60116	1192	1·982	50·454	56
57	57902	1385	2·393	41·789	57	58924	1237	2·100	47·619	57
58	56517	1429	2·529	39·541	58	57687	1277	2·215	45·147	58

TABLE C *continued.*

ENGLAND AND WALES.

Ages.	MALES.				Ages.	FEMALES.				Ages.
	Living.	Dying.	Mortality per Cent.	Specific Intensity.		Living.	Dying.	Mortality per Cent.	Specific Intensity.	
59	55088	1478	2·684	37·258	59	56410	1325	2·348	42·590	59
60	53610	1527	2·849	35·100	60	55085	1365	2·479	40·339	60
61	52083	1583	3·040	32·895	61	53720	1410	2·625	38·095	61
62	50500	1637	3·242	30·845	62	52310	1463	2·797	35·753	62
63	48863	1697	3·474	28·785	63	50847	1529	3·008	33·245	63
64	47166	1754	3·720	26·882	64	49318	1594	3·233	30·931	64
65	45412	1814	3·996	25·025	65	47724	1666	3·492	28·637	65
66	43598	1867	4·284	23·343	66	46058	1732	3·761	26·589	66
67	41731	1923	4·608	21·701	67	44326	1801	4.065	24·600	67
68	39808	1969	4·947	20·214	68	42525	1863	4·383	22·815	68
69	37839	2016	5·329	18·765	69	40662	1929	4·744	21·079	69
70	35823	2054	5·735	17·437	70	38733	1985	5·126	19·508	70
71	33769	2092	6·197	16·137	71	36748	2044	5·563	17·976	71
72	31677	2118	6·686	14·957	72	34704	2090	6·022	16·606	72
73	29559	2141	7·243	13·806	73	32614	2134	6·543	15·283	73
74	27418	2146	7·828	12·775	74	30480	2161	7·090	14·104	74
75	25272	2149	8·502	11.762	75	28319	2183	7·711	12·968	75
76	23123	2131	9·218	10·848	76	26136	2187	8·368	11·950	76
77	20992	2108	10·041	9·960	77	23949	2180	9·103	10·985	77
78	18884	2057	10·924	9·158	78	21769	2149	9·876	10·126	78
79	16827	1997	11·896	8·403	79	19620	2105	10·732	9·319	79
80	14830	1911	12.889	7·758	80	17515	2035	11·621	8·606	80
81	12929	1806	13·972	7·158	81	15480	1948	12·588	7·943	81
82	11123	1675	15·055	6·644	82	13532	1838	13·589	7·358	82
83	9448	1531	16·206	6·170	83	11694	1716	14·674	6·817	83
84	7917	1377	17·399	5·747	84	9978	1575	15·789	6·329	84
85	6540	1224	18·716	5·349	85	8403	1430	17·020	5·875	85
86	5316	1066	20·098	4·975	86	6973	1277	18·312	5·461	86
87	4250	926	21·777	4·591	87	5696	1123	19·708	5·074	87
88	3324	768	23·095	4·330	88	4573	968	21·162	4·726	88
89	2556	630	24·687	4·050	89	3605	819	22·706	4·403	89
90	1926	506	26·277	3·806	90	2786	676	24·268	4·120	90
91	1420	396	27·877	3·589	91	2110	545	25·846	3·868	91
92	1024	302	29·582	3·381	92	1565	429	27·404	3·650	92
93	722	224	31·127	3·212	93	1136	329	28·999	3·450	93
94	498	163	32·817	3·047	94	807	247	30·625	3·266	94
95	335	115	34·297	2·920	95	560	180	32·193	3·107	95
96	220	75	35·572	2·811	96	380	128	33·724	2·966	96
97	145	53	36·644	2·729	97	252	89	35·223	2·839	97
98	92	34	37·482	2·668	98	163	60	36·642	2·729	98
99	58	22	38·066	2·627	99	103	39	37·971	2·634	99
100	36	13	38·650	2·587	100	64	25	39·300	2·544	100
101	23	9	39·234	2·549	101	39	16	40·629	2·461	101
102	14	5	39·818	2·511	102	23	10	41·958	2·384	102
103	9	3	40·402	2·475	103	13	6	43·287	2·310	103
104	6	2	40.986	2·440	104	7	3	44·617	2·241	104
105	4	2	41·570	2·405	105	4	2	45·947	2·177	105
106	2	1	42·154	2·372	106	2	1	47·277	2·115	106

show, out of 100,000 persons attaining the age of ten years, the number living to each subsequent year of life, and also the numbers dying in each successive year of life. Columns 5 and 10 contain the reciprocals of columns 4 and 9, and represent the specific intensity of life at each age. Male and female life will each be found to attain its highest specific intensity at the age of 14. It will also be seen that male life possesses a much higher specific intensity than female life up to the age of 25 inclusive; from that to the age of 38 the difference is very little, but that generally in favour of male life; and that from 38 upwards to nearly the extreme of life, the scale turns in favour of female life, and the specific intensity is higher throughout. At the age of 50 the two sexes attain their balance, the numbers surviving of each, from the age of 10, being equal. The nature of the specific intensity, in the preceding sense, must be clearly understood to refer to that period of life only to which it is affixed, and not to be any index to the general value of life; for it will be seen that although male life possesses a higher specific intensity up to the age of 38, still female life is of a higher absolute value throughout the whole of the same period.

Table D exhibits the Expectation of Life as deduced from the data already described; and without attempting any thing like an elaborate comparison between it and other tables, hitherto regarded as a near approximation to the real measure of life, such observations only will be made as appear to be more intimately connected with the subject of this paper.

It is clear that a table formed from the data at present under consideration, will show the value of life in the country generally; all classes of society, from the highest to the lowest, being included; and it will therefore serve as a useful standard of comparison with the measure of life in individual classes of society, provided the rate of mortality in those classes can be determined.

In order to convey a general idea of the value of life as represented by Table D, it may be stated that it gives a greater expectation to males throughout the whole range of the table, than is given in the Table at page XIX. of the 5th Report of the Registrar General:

At Age	10	the difference is	·68 of a year.
,,	20	,,	·81
,,	30	,,	·97
,,	40	,,	·92
,,	50	,,	·83
,,	60	,,	1·00
,,	70	,,	·44
,,	80	,,	·15
,,	90	,,	·15

[The value

Table D.

Expectation—England and Wales—*Whole Population.*

Ages.	Males.	Females.	Ages.	Males.	Females.
10	47·7564	48·3826	59	15·1806	16·1552
11	47·1332	47·7648	60	14·5854	15·5320
12	46·4626	47·1065	61	13·9983	14·9137
13	45·7555	46·4175	62	13·4215	14·3022
14	45·0234	45·7140	63	12·8544	13·6994
15	44·1781	44·9950	64	12·2990	13·1086
16	43·5342	44·2855	65	11·7545	12·5300
17	42·8034	43·5937	66	11·2230	11·9648
18	42·0862	42·9171	67	10·7026	11·4128
19	41·3830	42·2533	68	10·1954	10·8750
20	40·6910	41·5982	69	9·7000	10·3504
21	40·0092	40·9482	70	9·2176	9·8409
22	39·3339	40·2991	71	8·7480	9·3455
23	38·6652	39·6519	72	8·2927	8·8665
24	38·0025	39·0068	73	7·8510	8·4026
25	37·3457	38·3635	74	7·4251	7·9559
26	36·6946	37·7218	75	7·0131	7.5248
27	36·0455	37·0817	76	6·6184	7·1116
28	35·3975	36·4427	77	6·2395	6·7153
29	34·7494	35·8048	78	5·8802	6·3378
30	34·0990	35·1671	79	5·5361	5·9772
31	33·4466	34·5297	80	5·2160	5·6355
32	32·7916	33·8919	81	4·9094	5·3106
33	32·1337	33·2541	82	4·6253	5·0031
34	31·4736	32·6149	83	4·3567	4·7109
35	30·8120	31·9750	84	4·1025	4·4351
36	30·1469	31·3312	85	3·8610	4·1726
37	29·4808	30·6867	86	3·6349	3·9258
38	28·8130	30·0390	87	3·4212	3·6938
39	28·1443	29·3877	88	3·2350	3·4781
40	27·4760	28·7330	89	3·0567	3·2778
41	26·8065	28·0742	90	2·8930	3·0944
42	26·1382	27·4125	91	2·7458	2·9256
43	25·4701	26·7479	92	2·6143	2·7703
44	24·8039	26·0809	93	2·4986	2·6276
45	24·1390	25·4120	94	2·3976	2·4950
46	23·4767	24·7420	95	2·3208	2·3750
47	22·8156	24·0703	96	2·2727	2·2632
48	22·1567	23·3985	97	2·1879	2·1587
49	21·4996	22·7263	98	2·1631	2·0644
50	20·8463	22·0545	99	2·1379	1·9757
51	20·1947	21·3834	100	2·1388	1·8750
52	19·5478	20·7137	101	2·0652	1·7564
53	18·9050	20·5461	102	2·0715	1·6304
54	18·2682	19·3821	103	1·9445	1·5000
55	17·6370	18·7220	104	1·6667	1·3571
56	17·0128	18·0682	105	1·2500	1·0000
57	16·3946	17·4236	106	1·0000	·5000
58	15·7842	16·7865	107	·5000	

The value of Female Life, TABLE D, is also higher than Female Life in the Table of the Registrar General; the difference of Expectation in the two Tables being—

At Age	10	the difference is	·57	of a year.
,,	20	,,	·79	,,
,,	30	,,	·92	,,
,,	40	,,	1·01	,,
,,	50	,,	·98	,,
,,	60	,,	1·12	,,
,,	70	,,	·81	,,
,,	80	,,	·44	,,
,,	90	,,	·32	,,

A comparison of the expectation of Male Life in TABLE D with the Carlisle Table, which includes both sexes, will shew a higher value of life in the Carlisle Table up to age 54:

At Age	10	the difference is	1·06	of a year.
,,	20	,,	·77	,,
,,	30	,,	·24	,,
,,	40	,,	·13	,,
,,	50	,,	·26	and
,,	54	they nearly coincide.		

Again, from that age up till 75 the difference is very little, but that generally against the Carlisle Table; and at 75 the Carlisle Table again crosses, and maintains a superiority till the extreme of life.

The expectation of Female Life, as shewn in TABLE D, is higher than the expectation of the Carlisle Table after 15 years of age:

At Age	20	the difference being	·14	of a year.
,,	30	,,	·83	,,
,,	40	,,	1·12	,,
,,	50	,,	·94	,,
,,	60	,,	1·18	,,
,,	70	,,	1·66	,,
,,	80	,,	·13	,,
,,	88	they nearly coincide, and the Carlisle Table continues higher after that age.		

A comparison of the mean of the expectation of Male and Female Life in

Table D, with the expectation of the Carlisle Table, produces the following results, namely,

At Age	10	the difference in favour of the Carlisle Table is		·75	of a year.
,,	20	,,	,,	·32	,,
,,	30	the difference in favour of England & Wales is		·29	,,
,,	40	,,	,,	·49	,,
,,	50	,,	,,	·34	,,
,,	60	,,	,,	·71	,,
,,	70	,,	,,	·35	,,
Again at	80	the difference in favour of the Carlisle Table is		·09	,,
,,	90	,,	,,	·29	,,

So that the absolute difference throughout the whole course of both Tables is very small, and the near approximation rather remarkable, considering the very different sources from which the data are derived. For a more minute comparison of those results with several of the best recognized Life Tables, reference is made to the Table in the Appendix, Note I.

Much attention has of late been given to the supposed influence of locality on the duration of life; still no public means have yet been employed to correctly solve the question. For the progress of vital statistics it unfortunately happens, that the public records of this country are kept with very little regard to method or unity of plan. The Report of the Census may certainly in itself be regarded as a very complete document; and perhaps no other country possesses such excellent Mortuary Registers; yet for almost every purpose of exact calculation, both documents are nearly useless. No two things should have been more intimately related in design and classification, than the Census of the People and the Registration of Deaths. Still they seem to have been compiled without any regard to each other. For example, if it were required to compare any two counties in England—a manufacturing with an agricultural county—an inland with a coasting county—in order to determine the relative value of life in the respective populations, it cannot at the present time be done. The Report of the Census Commissioners gives the population for those counties; but on reference to the reports of the Registrar General it is found that the deaths are given for quite a different arrangement of districts. Again, if it be required to compare one district of the Registrar General with another, the same kind of difficulty arises; for, on turning to the Census Report, those districts are in no way recognised. Precisely the same want in unity of plan is to be regretted in respect to the town districts of England, the districts of Census Commissioners constantly differing from those adopted by the Registrar General.

Were these difficulties overcome, it would then be easy to determine the difference of mortality in various districts, in precisely the same manner that the difference of mortality in male and female life has been found in the preceding Table. Another inquiry at least

would however still remain, before it could be decided to what extent the difference of mortality was owing to the simple influence or peculiarity of locality itself.

At present it is right to assume, that either employment or occupation—condition in life, or rank in society—poverty or riches—has as direct an influence on the duration of life, as peculiarity of locality or habitation; for the effect of neither one nor the other of the presumed influencing causes has yet been correctly defined. The truth of this assumption may appear more evident thus:—Suppose that the town of Liverpool were compared with some purely agricultural district, and that a much higher rate of mortality was found to prevail in the former; it would be no more right to assign this result wholly, or indeed any given portion of it, to the badly-conditioned streets and ill-planned houses of Liverpool, than to any other of the supposed causes.

In order to determine the simple influence of locality, like classes in the respective districts must be compared. In a comparison of districts A and B, if it so happened that in A two elements *c* and *d* were found to influence the value of life, while in B one only of those elements existed, the grounds of comparison would evidently be fallacious. Now this is precisely a parallel case to the state of things which exists in comparisons that have frequently been made between the manufacturing towns and the rural districts of England, and between one manufacturing town and another. Causes influencing the duration of life, independent of locality itself, frequently exist in the one, and not in the other; by overlooking which, observers are often led to assign excessive mortality to imaginary causes. If simple elements were compared, errors of this kind would be avoided. Keeping this in view, and referring to the preceding case, let *c* be supposed to represent comfort, and *d* distress. If, comparing comfort in district A with comfort in district B, a greater mortality were found to prevail in the former than in the latter, it would then be right to assume that the remaining elements—ill-ventilated houses, badly-drained streets, and the like—in district A, were not so favourable to life as in district B ; but it would have been wrong to draw such a conclusion, had Comfort and Distress in the one district been compared with Comfort only in the other.

It is evident that, in a comparison of the general mortality of any one place with that of another, such errors could not be avoided. It may happen that the prevalence of a particular kind of employment or occupation in the one, which is not common to the other district—but which employment is of an unhealthy nature, or perhaps subject to great fluctuations in prosperity, or probably both combined—may produce an excessive mortality, the cause of which may be attributed to badly-planned dwellings, instead of to poverty and its train of direful consequences.

If it were possible to compare any one class in a given district with the same class under exactly similar circumstances in another district, the only distinction being the difference of district or locality, then it is plain that the influence of locality, if any, would manifest itself.

Again, if different classes of persons in the same locality were compared—for example, those following different employments—the only distinction being difference of employment, then the force of that element, if any, on the duration of life would appear.

In the present paper it is proposed to enter into this question, and to shew if possible the influence of locality in the manner just described. The effect of employment on health will be treated of, on the present occasion, so far only as may be necessary to solve the question of locality.

DURATION OF LIFE IN VARIOUS CLASSES.

THE data to which this part of the inquiry belongs have been derived from two sources. One portion—that relating to the Friendly Societies in England—has been obtained through the kindness of Mr. J. Tidd Pratt; and consists of the Quinquennial Returns for 1836-1840, made under the Friendly Societies Act, 10 Geo. IV. c. 56. § 34, as amended by 4 & 5 Wm. IV. c. 40. § 6. And an inspection of the form of schedule given under that Act will shew the nature and extent of the information which can be derived from this source.

It was considered that Returns from the Friendly Societies in Scotland would form a valuable contribution to Vital Statistics, and at the same time be interesting to compare with the results obtained from English Societies; especially as Mr. Ansell's valuable work had given rise to many curious conjectures on the comparative amount of Sickness in the two countries; the inquiry made by the Highland Society having exhibited a less degree of sickness among the Scotch Societies, than the results of Mr. Ansell's investigation shewed to be prevalent in Societies in England. Accordingly, in 1840, a number of blank schedules were sent to nearly every parish minister in Scotland, with a note requesting him to use his influence with the neighbouring Friendly Societies, to induce them to furnish the information required; but the attempt to procure data in this manner proved an almost complete failure. In 1843 another attempt was made, but on this occasion prizes were offered to those making the best and most complete returns; which had the desired effect of procuring a series of schedules filled up evidently with much care; and although very elaborate, the nicest attention seemed to be given to the minutest detail. These constitute the second source from which the data just referred to are derived.

As it is proposed to enter into a few points only of the inquiry, in this paper, a form of the Schedule is given, that an idea may be formed of the extent of the information obtained, as well as the combinations of which the varied character of the data is susceptible.

_____ *Society, Established in the Year* _____ *in the Town of* _____ *County of* _____

MEMBERS.		Date of Birth.	Date of Admission into the Society.	Age at the time of Admission.	Date of becoming a Free Member.	The Whole amount of time to which the Member has been entitled to Aliment, including Bed-lying, Walking-about, and every other description of Aliment: during the Years—								The part of that time which he has been entitled to Walking-about Pay only: during the Years—								DEATH.					Date at which the Member ceased to belong to the Society: whether from arrears of Contributions, from Expulsion, or from any other cause except Death.	Number of Attacks of Illness.	Remarks.
Name.	Occupation or Trade.					1831		&c.		&c.		1842		1831		&c.		&c.		1842		Date of	Age at	Disease or Cause of	Period sick before Death.				
						Weeks.	Days.	Weeks.	Days.	Weeks.	Days.	Weeks.	Days.	Weeks.	Days.	Weeks.	Days.	Weeks.	Days.	Weeks.	Days.				Weeks.	Days.			

1. When any particular case of Sickness may have commenced in one year, and continued to the following year, care must be taken to ascribe the proper quantity of sickness to each year.

2. Every member's name, or initials, must be entered in the Schedule, whether he may have received aliment at any time, or not.

3. In filling up the columns of Sickness, Sundays are meant to be included. If it should be more convenient to exclude them, please to state that you have done so.

4. If the member's correct date of birth, and also his age at admission into the Society, be known, it will be entered as such; if not, his present age, his age at death or at expulsion, as the case may be, must be guessed at or approximated to by the person who fills up the Schedule, and also by any other person who may know the member in question, and inserted in the column headed "Remarks." The age on the preceding birthday should be taken, if not otherwise expressed.

5. If it be the practice of the Society to distinguish between Bed-lying and Walking-about Pay, care must be taken to fill up the respective columns.

6. The column of Deaths, as well as the column of Members who have been expelled, or who have left the Society, must be filled up with much care.

7. Should it be inconvenient or impossible to furnish the information for any particular column, or columns, it is hoped that the remaining ones will be filled up with as much accuracy as possible.

8. If it should happen that the information given respecting any particular Member stands in need of any explanation, such is to be given in the column headed "Remarks."

9. If the columns for the whole period of twelve years cannot be filled up, please to fill up as many as possible.

10. It will also be important to have an Abstract of the Society's Income and Expenditure filled up in the annexed Form.

11. A Copy of the Society's Printed Rules or Regulations will be useful; and if such cannot be forwarded, then a written abstract of the terms of Contribution from Members, and of the benefits or aliments afforded them; with any other information of a useful nature relating to the Society.

12. A Copy of the Return of *Sickness* and Mortality sent to the Barrister or Advocate appointed to Certify the Rules of Friendly Societies, would be very desirable.

13. Insert, in the column headed "Remarks," how many times the Member may have been sick during the period referred to in the adjoining columns; for example, a Member may have experienced, in any one or more years, twenty weeks of sickness, which may have been all one attack of illness, or it may represent three or four different attacks of illness; and the number of attacks is to be stated, which can always be done by referring to the Society's books, and seeing the number of applications he has made for sick allowance.

14. It is also to be kept in view, that when a member's death is recorded, it should be stated in the column headed "Disease or Cause of" for what period he was ill in the attack of sickness immediately preceding his death.

Abstract of the Society's Income and Expenditure.

Date of balancing in the respective years.		Amount of Income during the preceding year, from		Amount of Expenditure during the preceding year, on account of		Amount of Stock in hand at each period of balancing.
		Contributions not including Arrears.	Interest of Stock and other Sources.	Aliment in Sickness.	Funeral and other Expenses.	
	1831					
	&c.					
	&c.					
	1842					

Number of Members in the Society on the _____ day of _____ 1831 _____

" " " _____ &c. _____

" " " _____ &c. _____

" " " _____ 1842 _____

The data were subsequently abstracted on sheets similar to the following, and the results of every Society were kept separate from those of every other. The results of every particular trade or employment were also kept distinct from those of every other occupation.

Schedule on which the Original Facts were Abstracted.

No.	10					11					&c.					&c.					&c.					&c.					99					100					Remarks.
		Sickness					Sickness					Sickness					Sickness					Sickness					Sickness					Sickness					Sickness				
	Cases	Weeks	Days	Deaths		Cases	Weeks	Days	Deaths		Cases	Weeks	Days	Deaths		Cases	Weeks	Days	Deaths		Cases	Weeks	Days	Deaths		Cases	Weeks	Days	Deaths		Cases	Weeks.	Days	Deaths		Cases	Weeks	Days	Deaths	

By this arrangement a means was afforded to measure the precise amount of Sickness and Mortality experienced by any particular Society, the ratio due to each year of life, and also how far its affairs were influenced by the particular trades and occupations of its Members.

All the Societies having been abstracted in this way, the results were afterwards combined in the following manner:—

The Societies belonging to the Rural Districts were placed in one group.

The Societies belonging to Town Districts were placed in another group.

And a third group was formed from those Societies established in the great Towns or Cities. A list of the places composing the respective groups of Rural Districts, Town Districts, and City Districts, is given in Appendix, Note II.

This plan was adopted in preference to a binary arrangement, in order to prevent a purely rural district from being mixed up with some of the smaller towns, and the great city districts with the larger towns.

The results of the first group, or Rural Districts, were then combined as follows. The totals of a given trade were placed on one of the Abstract Sheets; and the totals of the same trade in a second and a third Society, and so forth, were placed next in order on the same sheet, until all the Societies in the Rural Districts of the first county in alphabetical order were exhausted. The sums of those totals were then found, which shewed the amount of sickness and mortality among a certain number of persons at each age and of a given trade in that county. The same trade was carried through the rural districts of every other county in the same manner; and the totals for each county being added together, shewed the general result for that trade in the whole of the rural districts combined. The same trade was carried through the second group, or Town Districts, and also the third group, or City Districts, in precisely the same manner, so that an opportunity was thus afforded, of viewing the comparative degree of health, in the same occupation or employ-

[ment,

Table E.

Trades not Classified—Rural Districts—*Males.*

Age.	Population.		DEATHS.			SICKNESS.			Age.
	At Each Age.	In Periods.	At Each Age.	In Periods. Total.	In Periods. Per Cent.	At Each Age.	In Periods. Total.	In Periods. Per Annum.	
10	50	50	...	...	...	11·286	11·286	0·2257	10
11	91		...			72·572			11
12	163		...			180·572			12
13	254	1737	...	4	0·2302	255·858	1373·861	0·8485	13
14	423		1			402·144			14
15	806		3			462·715			15
16	1443		10			1036.572			16
17	2348		20			1870·572			17
18	3826	21408	28	159	0·7427	3046·143	17913·857	0·8367	18
19	5736		42			4921·428			19
20	8055		59			7039·142			20
21	10518		75			9135·856			21
22	13081		96			11065·856			22
23	15232	74586	109	550	0·7333	12714·856	62783·994	0·8417	23
24	17150		127			14151·713			24
25	18605		143			15715·713			25
26	19836		153			17252·713			26
27	20791		150			18295·427			27
28	21672	107009	154	760	0·7102	19914·856	95782·138	0·8950	28
29	22189		152			20343·428			29
30	22521		151			19975·714			30
31	22495		154			19281·857			31
32	22297		150			18901·000			32
33	21840	110107	153	785	0·7129	18020·142	93140·282	0·8459	33
34	21834		159			18192·856			34
35	21641		169			18744·427			35
36	21566		163			19461·570			36
37	21341		169			20218·570			37
38	21313	103887	163	801	0·7710	20797.999	101701·423	0·9789	38
39	20291		156			20663·999			39
40	19376		150			20559·285			40
41	18299		150			19893·570			41
42	17393		136			19747·141			42
43	16232	82763	135	692	0·8361	19453·570	97756·993	1·1811	43
44	15769		141			19322·570			44
45	15070		130			19340·142			45
46	14639		132			19275·428			46
47	14006		140			18744·143			47
48	13455	66447	144	686	1·0324	17796·571	90544·713	1·3626	48
49	12510		132			17345·857			49
50	11837		138			18382·714			50
51	10980		133			17718·857			51
52	10236		139			17994·428			52
53	9485	48361	143	702	1·4515	18670·714	93350·427	1·9302	53
54	9066		146			19254·857			54
55	8594		141			19711·571			55

TABLE E *continued.*

TRADES NOT CLASSIFIED.—RURAL DISTRICTS.—*Males.*

Age.	Population.		DEATHS.			SICKNESS.			Age.
	At Each Age.	In Periods.	At Each Age	In Periods. Total.	In Periods. Per Cent.	At Each Age.	In Periods. Total.	In Periods. Per Annum.	
56	8151		145			20159·714			56
57	7768		142			20457·571			57
58	7382	36326	141	698	1·9215	21510·714	106070·284	2·9199	58
59	6789		139			21979·428			59
60	6236		131			21962·857			60
61	5692		122			21534·000			61
62	5121		123			21917·286			62
63	4613	23677	121	596	2·5172	23708·143	124379·429	5·2531	63
64	4286		116			27106·000			64
65	3965		114			30114·000			65
66	3694		117			33347·285			66
67	3453		130			35968·142			67
68	3188	15781	133	653	4·1378	36220·570	176695·852	11·1967	68
69	2870		132			35701·142			69
70	2576		141			35458·713			70
71	2248		138			34905·571			71
72	1931		116			33618·857			72
73	1666	8602	104	551	6·4054	32508·000	160791·141	18·6922	73
74	1472		101			30863·285			74
75	1285		92			28895·428			75
76	1130		85			26211·142			76
77	984		73			23605·142			77
78	855	4203	66	333	7·9229	20783·999	100552·281	23·9239	78
79	688		56			16875·856			79
80	546		53			13076·142			80
81	428		43			10298·856			81
82	339		42			8185·570			82
83	255	1397	35	168	12·0257	6316·428	34925·711	25·0005	83
84	208		31			5376·000			84
85	167		17			4748·857			85
86	139		15			4094·143			86
87	106		11			3155·715			87
88	84	435	8	45	10·3448	2415·715	12497·289	28·7294	88
89	62		6			1733·858			89
90	44		5			1097·858			90
91	28		2			677·001			91
92	21		...			483·001			92
93	14	82	...	2	2·4390	274·715	1717·718	20·9477	93
94	11		...			170·572			94
95	8		...			112·429			95
96	6					52·286			96
97	5					...			97
98	5	25	...	...	...	...	5228·6	2·0914	98
99	5					...			99
100	4					...			100
101	3	3							101
	706886		8185		1·1579	1372040·965		1·9410	

TABLE E *continued.*

TRADES NOT CLASSIFIED.—TOWN DISTRICTS—*Males.*

Age.	Population.		DEATHS.			SICKNESS.			Age.
	At Each Age.	In Periods.	At Each Age	In Periods. Total.	In Periods. Per Cent.	At Each Age.	In Periods Total.	In Periods Per Annum.	
10	15	15	...	...	...	19·000	19·000	1·2666	10
11	48		...			29·857			11
12	109		...			61·571			12
13	206	1454	1	4	0·2751	160·571	1036·712	0·7130	13
14	403		1			270·428			14
15	688		2			514·285			15
16	1017		7			727·285			16
17	1390		8			1070·571			17
18	1826	9315	8	50	0·5367	1465·571	7765·284	0·8336	18
19	2278		13			2041·714			19
20	2804		14			2460·143			20
21	3460		13			3099·429			21
22	4224		19			3837·000			22
23	5076	25473	29	136	0·5338	4598·286	22731·143	0·8907	23
24	5958		33			5290·000			24
25	6755		42			5906·428			25
26	7442		49			6300·713			26
27	8004		53			6524·428			27
28	8422	41592	55	286	0·6876	6788·428	34582·425	0·8314	28
29	8720		62			7237·428			29
30	9004		67			7731·428			30
31	9205		73			8066·000			31
32	9318		75			8458·857			32
33	9381	46837	79	383	0·8177	9080·428	44573·284	0·9516	33
34	9506		80			9288·571			34
35	9427		76			9679·428			35
36	9269		71			9938·571			36
37	9072		81			10061·714			37
38	8815	43221	77	385	0·8907	9653·571	47601·997	1·1013	38
39	8255		78			9144·142			39
40	7810		78			8803·999			40
41	7411		77			8931·284			41
42	7055		66			9543·426			42
43	6710	34220	73	364	10637	10186·426	51863·133	1·5155	43
44	6588		74			11242·141			44
45	6456		74			11909·856			45
46	6279		81			12552·428			46
47	6058		89			13032·857			47
48	5840	28781	83	415	1.4419	13391·857	66420·570	2·3077	48
49	5504		79			13637·714			49
50	5100		83			13805·714			50

TABLE E *continued.*

TRADES NOT CLASSIFIED.—TOWN DISTRICTS—*Males.*

Age.	Population.		DEATHS.			SICKNESS.			Age.
	At Each Age.	In Periods.	At Each Age	In Periods. Total.	In Periods. Per Cent.	At Each Age.	In Periods. Total.	In Periods. Per Annum.	
51	4704		78			13249·571			51
52	4341		74			12215·285			52
53	3998	20318	75	387	1·9047	11786·857	59499·141	2·9283	53
54	3748		80			11240·000			54
55	3527		80			11007·428			55
56	3286		88			11096·428			56
57	3025		85			11361·285			57
58	2717	13341	82	392	2·9383	10744·856	51563·851	3·8650	58
59	2335		73			9769·141			59
60	1978		64			8592·141			60
61	1699		53			7815·570			61
62	1462		56			7772·428			62
63	1268	6673	51	252	3·7764	8158·428	43278·569	6·4856	63
64	1163		46			9176·143			64
65	1081		46			10356·000			65
66	978		45			10969·571			66
67	867		35			10864·285			67
68	782	3847	38	207	5·3808	10746·142	50466·567	13·1184	68
69	665		43			9632·427			69
70	555		46			8254·142			70
71	470		41			7573·285			71
72	410		42			7070·142			72
73	354	1830	39	183	10·0000	6629·714	34900·569	19·0713	73
74	315		33			6746·000			74
75	281		28			6881·428			75
76	247		26			6716·571			76
77	207		22			6218·428			77
78	170	898	17	89	9·9109	5596·142	28221·140	31·4266	78
79	146		14			5088·142			79
80	128		10			4601·857			80
81	112		11			3899·714			81
82	101		12			3487·000			82
83	89	439	11	55	12·5284	3107·000	15505·715	35·3205	83
84	76		10			2720·572			84
85	61		11			2291·429			85
86	48		9			2010·572			86
87	36		6			1610·715			87
88	27	140	6	29	20·7142	1189·001	6033·575	43·0969	88
89	18		5			754·715			89
90	11		3			468·572			90
91	6		2			256·429			91
92	2	8	1	3	37·5000	93·286	349·715	43·7143	92
	278402		3620		1·3003	566412·390		2·0309	

Table E *continued.*

Trades not Classified.—City Districts—*Males.*

Age.	Population.		DEATHS.			SICKNESS.			Age.
				In Periods.			In Periods.		
	At Each Age.	In Periods.	At Each Age	Total.	Per Cent.	At Each Age.	Total.	Per Annum.	
10	...	...	...	...	...	...	...	...	10
11	...								11
12	...								12
13	...	10	...	...	...	...	...	...	13
14	3								14
15	7								15
16	12					... ...			16
17	23					... ...			17
18	56	443	...	...	...	10·000	15·3000	0·3453	18
19	113					36·143			19
20	239					106·857			20
21	450		1			344·571			21
22	798		5			615·999			22
23	1236	6584	7	44	0·6682	975·285	5904·709	0·8968	23
24	1798		14			1720·570			24
25	2402		17			2248·284			25
26	3047		22			2901·427			26
27	3717		29			3720·713			27
28	4395	21640	40	196	0·9057	4670·141	23100·565	1·0674	28
29	4972		47			5390·713			29
30	5509		58			6417·571			30
31	5903		62			6851·428			31
32	6130		57			7087·000			32
33	6248	31086	64	330	1·0615	7218·000	36180·285	1·1638	33
34	6380		69			7381·286			34
35	6425		78			7642·571			35
36	6381		80			8072·857			36
37	6271		81			8102·571			37
38	6146	30333	78	383	1·2626	8208·714	40876·285	1·3475	38
39	5878		74			8262·714			39
40	5657		70			8229·429			40
41	5478		76			8144·857			41
42	5329		84			8645·428			42
43	5097	25428	84	409	1·6084	8654·857	41823·427	1·6447	43
44	4907		85			8366·857			44
45	4617		80			8011·428			45
46	4419		79			7991·428			46
47	4006		74			7752·428			47
48	3758	18857	66	332	1·7606	7696·285	38926·425	2·0642	48
49	3475		59			7779·142			49
50	3199		54			7707·142			50

TABLE E *continued.*

TRADES NOT CLASSIFIED.—CITY DISTRICTS—*Males.*

Age.	Population.		DEATHS.			SICKNESS.			Age.
	At Each Age.	In Periods.	At Each Age	In Periods. Total.	In Periods. Per Cent.	At Each Age.	In Periods. Total.	In Periods. Per Annum.	
51	2966		53			7567·428			51
52	2722		54			7303·285			52
53	2460	12452	57	275	2·2084	7047·999	35632·710	2·8616	53
54	2247		58			6968·999			54
55	2057		53			6744·999			55
56	1847		43			6308·571			56
57	1663		39			6149·571			57
58	1494	7459	32	181	2·4266	6051·428	29588·140	3·9667	58
59	1312		30			5772·285			59
60	1143		37			5306·285			60
61	1004		37			5017·570			61
62	869		34			4477·570			62
63	743	3823	31	152	3·9759	3938.713	20236·565	5·2933	63
64	644		29			3471·856			64
65	563		21			3330·856			65
66	490		19			3042·142			66
67	447		23			2789·142			67
68	410	2027	26	112	5·5254	2736·142	13813·710	6·8148	68
69	364		23			2645·142			69
70	316		21			2601·142			70
71	278		22			2716·428			71
72	230		17			2890·143			72
73	183	988	13	76	7·6923	2821·286	14504·286	14·6804	73
74	157		12			2885·429			74
75	140		12			3191·000			75
76	123		10			3461·857			76
77	116		10			3823·428			77
78	111	525	12	57	10·8571	3913·714	17821·427	33·9455	78
79	97		13			3660·428			79
80	98		12			2962·000			80
81	59		10			2225·000			81
82	40		8			1466·286			82
83	28	166	5	29	17·4698	1037·000	6158·286	37·0981	83
84	21		3			742·000			84
85	18		3			688·000			85
86	14		3			550·000			86
87	10		2			372·000			87
88	6	34	2	9	26·4705	216·000	1258·000	37·0000	88
89	3		1			112·000			89
90	1		1			8 000			90
	161855		2585		1·5971	325977·820		2·0140	

TABLE E *continued.*

TRADES NOT CLASSIFIED.—RURAL, TOWN AND CITY DISTRICTS.—*Males.*

Age.	Population.		DEATHS.			SICKNESS.			Age.
				In Periods.			In Periods.		
	At Each Age.	In Periods.	At Each Age	Total.	Per Cent.	At Each Age.	Total.	Per Annum.	
10	65	65	...	...	...	30·286	30·286	0·4659	10
11	139		...			102·429			11
12	272		...			242·143			12
13	460	3201	1	8	0·2499	416·429	2410·573	0·7530	13
14	829		2			672·572			14
15	1501		5			977·000			15
16	2472		17			1763·857			16
17	3761		28			2941·143			17
18	5708	31166	36	209	0·6706	4521·714	25832·141	0·8288	18
19	8127		55			6999·285			19
20	11098		73			9606·142			20
21	14428		89			12579·856			21
22	18103		120			15518·856			22
23	21544	106743	145	730	0·6838	18288·427	91419·850	0·8564	23
24	24906		174			21162·284			24
25	27762		202			23870·427			25
26	30325		224			26454·856			26
27	32512		232			28540·570			27
28	34489	170241	249	1242	0·7295	31373·428	153465·139	0·9014	28
29	35881		261			32971.571			29
30	37034		276			34124·714			30
31	37603		289			34199·285			31
32	37745		282			34446·857			32
33	37469	188030	296	1498	0·7966	34318·571	173893·855	0·9248	33
34	37720		308			34862·714			34
35	37493		323			36066·428			35
36	37216		314			37473·000			36
37	36684		331			38382·857			37
38	36274	177441	318	1569	0·8786	38660·285	190179·711	1·7029	38
39	34424		308			38070·856			39
40	32843		298			37592·713			40
41	31188		303			37019·713			41
42	29777		286			37935·998			42
43	28039	142411	292	1465	1·0287	38294·856	191443·567	1·3443	43
44	27264		300			38931·571			44
45	26143		284			39261·429			45
46	25237		292			39819·286			46
47	24070		303			39529·429			47
48	23053	113985	293	1433	1·2571	38884·714	195891·714	1·7185	48
49	21489		270			38762·714			49
50	20136		275			38895·571			50
51	18650		264			38535·856			51
52	17299		267			37512·999			52
53	15943	81131	275	1364	1·6812	37505·571	188482·281	2·3231	53
54	15061		284			37463·856			54
55	14178		274			37463·999			55

TABLE E *continued.*

TRADES NOT CLASSIFIED—RURAL, TOWN AND CITY DISTRICTS.—*Males.*

Age.	Population.		DEATHS.			SICKNESS.			Age.
				In Periods.			In Periods.		
	At Each Age.	In Periods.	At Each Age	Total.	Per Cent.	At Each Age.	Total.	Per Annum.	
56	13284		276			37564·714			56
57	12456		266			37968·428			57
58	11593	57126	255	1271	2·2249	38306·999	187222·283	3·2773	58
59	10436		242			37520·857			59
60	9357		232			35861·285			60
61	8395		212			34367·142			61
62	7452		213			34167·285			62
63	6624	34173	203	1000	2 9262	35805·285	187894·567	5·4983	63
64	6093		191			39753·999			64
65	5609		181			43800·856			65
66	5162		181			47358·999			66
67	4767		188			49621·571			67
68	4380	21655	197	972	4·4885	49702·867	240976·141	11·1279	68
69	3899		198			47978·714			69
70	3447		208			46314·000			70
71	2996		201			45195·285			71
72	2571		175			43579·142			72
73	2203	11420	156	810	7·0928	41958·999	210195·995	18·4059	73
74	1944		146			40494·713			74
75	1706		132			38967·856			75
76	1500		121			36389·571			76
77	1307		105			33646·999			77
78	1136	5626	95	479	8·5140	30293·856	146594·853	26·0566	78
79	931		83			25624·428			79
80	752		75			20639·999			80
81	599		64			16423·570			81
82	480		62			13138·856			82
83	372	2002	51	252	12·5874	10460·428	56589·711	28·2665	83
84	305		44			8838·571			84
85	246		31			7728·286			85
86	201		27			6654·715			86
87	152		19			5138·429			87
88	117	609	16	83	13·6289	3820·714	19788·857	32·4940	88
89	83		12			2600·571			89
90	56		9			1574·428			90
91	34		4			933·428			91
92	23		1			576·286			92
93	14	90	...	5	5·5555	274·715	2067·400	22·9714	93
94	11		...			170·572			94
95	8		...			112·429			95
96	6					52·286			96
97	5					... ...			97
98	5	25	...	...	...	... ...	52·286	2·0914	98
99	5					... ...			99
100	4					... ...			100
101	3	3	...	...	...	...	...	...	101
	1147143		14390		1·2544	2264431·240		1·9740	

ment, in the three districts referred to. Those three districts were next combined, to give the general results for that trade without regard to locality. A second trade was taken up in the like manner, and carried through precisely the same steps, and so also were other trades until all were exhausted. The totals of the various trades in the Rural Districts were then combined, giving the general results for that district without regard to occupation, and so on with each of the other districts; and the combination of these last three gave of course the general results, without regard to either trade or locality.

All the possible combinations of those elements of the data being thus made, the next step was to exhibit the results in a convenient form, from which to make useful deductions. Tables were therefore formed, shewing the total number of persons, at every year of life over which the observations extend—the number of deaths among them yearly—and the amount of sickness yearly, expressed in weeks and decimals of a week. In the same Tables are also given the same facts for quinquennial periods of life, also the rate of mortality per cent., and the average amount of sickness per annum to each person.

As these observations extend over upwards of 400 different trades or occupations, the examination of each under the varied combinations described would involve the consideration of so immense a number of Tables, as would evidently perplex the present inquiry. Such only will therefore be brought forward as seem to bear distinctly on the more immediate question, What is the influence of Locality on Health and on the Duration of Life?

Table E, one of the class just referred to, will be useful in pointing out the distinction in the rates of Mortality in quinquennial periods of life, between the Male Population in the Rural, Town and City Districts, and for minute purposes of detail will no doubt afford many interesting illustrations; but on the present occasion a more extended and general view of the results is necessary, and an inspection of Table F will therefore be of more importance. This Table is formed from Table E, in precisely the sane manner that Table C was formed from Table B. On inspection of the results under the head "Rural Districts," it will be seen that the highest Specific Intensity is attained at the youngest ages in the Table, and that it decreases up to Age 20, from which Age up till 31 it increases, and then decreases gradually till near the extreme of life. A comparison of the Specific Intensity as given in this Table, with the general result for the Male Population in England and Wales as set forth in Table C, will shew a higher intensity of life through the whole range of the Table, maintaining at the same time a very remarkable parallelism.

It will be seen that the Specific Intensity

At age	20	in Table C	is as high as at	Age 39	in Table F (Rural Districts)
,,	30	,,	,,	47	,,
,,	40	,,	,,	50	,,
,,	50	,,	,,	55	,,
,,	60	,,	,,	63	,,
,,	70	,,	,,	71	,,

[An approximating

Table F

Trades not Classified—Rural Districts—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	230	·230	434·783	56	69171	1199	1·734	57·676
11	99770	229	·230	434·783	57	67972	1246	1·833	54·555
12	99541	249	·250	400·000	58	66726	1293	1·937	51·626
13	99292	289	·291	343·643	59	65433	1339	2·046	48·876
14	99003	349	·353	283·286	60	64094	1384	2·160	46·296
15	98654	429	·435	229·885	61	62710	1429	2·279	43·879
16	98225	527	·537	186·212	62	61281	1495	2·439	41·004
17	97698	605	·619	161·551	63	59786	1578	2·640	37·879
18	97093	660	·680	147·059	64	58208	1678	2·882	34·698
19	96433	694	·720	138·890	65	56530	1789	3·165	31·596
20	95739	708	·739	135·318	66	54741	1910	3·489	28·661
21	95031	700	·737	135·685	67	52831	2028	3·839	26·048
22	94331	692	·734	136·240	68	50803	2141	4·215	23·725
23	93639	685	·731	136·799	69	48662	2246	4·616	21·664
24	92954	676	·727	137·552	70	46416	2341	5·044	19·825
25	92278	667	·723	138·313	71	44075	2423	5·498	18·188
26	91611	659	·719	139·082	72	41652	2466	5·921	16·889
27	90952	650	·715	139·860	73	39186	2474	6·314	15·838
28	90302	643	·712	140·449	74	36712	2452	6·678	14·974
29	89659	637	·711	140·647	75	34260	2402	7·012	14·261
30	89022	633	·711	140.647	76	31858	2330	7·315	13·670
31	88389	628	·711	140·647	77	29528	2283	7·730	12·936
32	87761	627	·714	140·056	78	27245	2250	8·257	12·111
33	87134	626	·719	139·082	79	24995	2223	8·894	11·243
34	86508	628	·726	137·741	80	22772	2196	9·644	10·369
35	85880	632	·736	135·870	81	20576	2153	10·464	9·560
36	85248	637	·747	133·869	82	18423	2035	11·045	9·057
37	84611	642	·759	131·752	83	16388	1866	11·387	8·779
38	83969	648	·772	129·534	84	14522	1669	11·490	8·703
39	83321	653	·784	127·551	85	12853	1459	11·353	8·810
40	82668	659	·797	125·470	86	11394	1255	11·017	9·074
41	82009	664	·810	123·457	87	10139	1127	11·115	9·001
42	81345	674	·828	120·773	88	9012	1064	11·809	8·467
43	80671	687	·852	117·371	89	7948	1041	13·100	7·633
44	79984	704	·880	113·636	90	6907	1023	14·809	6·752
45	79280	725	·914	109·409	91	5884	1018	17·314	5·777
46	78555	749	·953	104·931	92	4866	982	20·173	4·958
47	77806	779	1·001	99·900	93	3884	912	23·476	4·261
48	77027	816	1·059	94·429	94	2972	821	27·625	3·621
49	76211	857	1·125	88·889	65	2151	706	32·826	3·046
50	75354	904	1·200	83·333	96	1445	565	39·132	2·555
51	74450	956	1·284	77·882	97	880	386	47·046	2·125
52	73494	1007	1·370	72·993	98	494	285	57·777	1·731
53	72487	1057	1·458	68·587	99	209	138	66·037	1·514
54	71430	1106	1·548	64·599	100	71	71	85·000	1·176
55	70324	1153	1·640	60·976					

TABLE F *continued.*

TRADES NOT CLASSIFIED.—TOWNS.—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	275	·275	363·636	56	65638	1657	2·524	39·620
11	99725	274	·275	363·636	57	63981	1742	2·723	36·724
12	99451	283	·285	350·877	58	62239	1815	2·916	34·294
13	99168	303	·306	326·797	59	60424	1871	3·097	32·289
14	98865	333	·337	296·736	60	58553	1916	3·273	30·553
15	98532	373	·379	263·852	61	56637	1948	3·440	29·036
16	98159	424	·432	231·481	62	54689	1990	3·639	27·480
17	97735	462	·473	211·416	63	52699	2039	3·868	25·853
18	97273	491	·505	198·020	64	50660	2091	4·128	24·225
19	96782	508	·525	190·476	65	48569	2146	4·418	22·635
20	96274	515	·535	186·916	66	46423	2130	4·739	21·101
21	95759	512	·535	186·916	67	44293	2294	5·180	19·305
22	95247	516	·540	185·185	68	41999	2412	5·742	17·415
23	94731	523	·552	181·159	69	39587	2544	6·425	15·564
24	94208	538	·571	175·131	70	37043	2678	7·228	13·835
25	93670	557	·595	168·067	71	34365	2801	8·152	12·267
26	93113	583	·626	159·744	72	31564	2805	8·888	11·251
27	92530	607	·656	152·439	73	28759	2713	9·435	10·599
28	91923	630	·685	145·985	74	26046	2551	9·794	10·210
29	91293	651	·713	140·252	75	23495	2341	9·964	10·036
30	90642	671	·740	135·135	76	21154	2104	9,946	10·054
31	89971	689	·766	130·548	77	19050	1912	10·037	9·960
32	89282	705	·790	126·582	78	17138	1754	10·235	9·775
33	88577	718	·811	123·305	79	15384	1622	10·542	9·488
34	87859	729	·830	120·482	80	13762	1508	10·957	9·124
35	87130	738	·847	118·064	81	12254	1407	11·481	8·711
36	86392	744	·861	116·144	82	10847	1326	12·227	8·176
37	85648	754	·880	113·636	83	9521	1256	13·196	7·581
38	84894	766	·902	110·865	84	8265	1189	14·388	6·949
39	84128	782	·929	107·643	85	7076	1118	15·802	6·329
40	83346	800	·960	104·167	86	5958	1036	17·439	5·734
41	82546	821	·994	100·603	87	4922	956	19·420	5·149
42	81725	847	1·037	96·432	88	3966	864	21·746	4·598
43	80878	880	1·088	91·912	89	3102	757	24·415	4·097
44	79998	918	1·147	87·184	90	2345	643	27·428	3·646
45	79080	959	1·213	82·440	91	1702	524	30·785	3·249
46	78121	1008	1·290	77·519	92	1178	396	33·584	2·978
47	77113	1056	1·369	73·046	93	782	280	35·829	2·791
48	76057	1104	1·452	68·871	94	502	188	37·518	2·665
49	74953	1152	1·537	65·062	95	314	123	39·287	2·545
50	73801	1201	1·627	61·463	96	191	78	40·995	2·439
51	72600	1248	1·719	58·174	97	113	49	43·643	2·292
52	71352	1309	1·835	54·496	98	64	33	50·913	1·964
53	70043	1382	1·973	50·684	99	31	16	51·307	1·948
54	68661	1465	2·134	46·860	100	15	15	75·000	1·333
55	67196	1558	2·318	43·141					

TABLE F *continued.*

TRADES NOT CLASSIFIED.—CITIES.—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	396	·3961	252·525	56	58620	1371	2·3393	42·753
11	99604	395	·3961	252·525	57	57249	1395	2·4361	41·051
12	99209	401	·4038	247·525	58	55854	1445	2·5863	38·669
13	98808	414	·4193	238·664	59	54409	1518	2·7896	35·842
14	98394	435	·4426	225·734	60	52891	1611	3·0463	32·830
15	97959	464	·4736	210·971	61	51280	1721	3·3561	29·797
16	97495	499	·5123	195·313	62	49559	1817	3·6660	27·278
17	96996	545	·5511	181·488	63	47742	1898	3·9759	25·151
18	96451	569	·5900	169·492	64	45844	1965	4·2858	23·332
19	95882	596	·6212	161·031	65	43879	2017	4·5957	21·758
20	95286	614	·6446	155·039	66	41862	2054	4·9056	20·383
21	94672	627	·6603	151·512	67	39808	2086	5·2402	19·084
22	94045	637	·6777	147·493	68	37722	2112	5·5995	17·860
23	93408	651	·6967	143·472	69	35610	2131	5·9832	16·714
24	92757	673	·7252	137·931	70	33479	2140	6·3921	15·644
25	92084	703	·7632	131·062	71	31339	2139	6·8255	14·652
26	91181	739	·8107	123·305	72	29200	2131	7·2988	13·701
27	90442	770	·8509	117·509	73	27069	2115	7·8120	12·801
28	89672	793	·8839	113·122	74	24954	2087	8·3651	11·954
29	88879	808	·9095	110·011	75	22867	2049	8·9582	11·163
30	88071	817	·9280	107·759	76	20818	1997	9·5911	10·426
31	87254	837	·9591	104·275	77	18821	1950	10·3620	9·652
32	86417	861	·9961	100·402	78	16871	1902	11·2708	8·873
33	85556	889	1·0389	96·246	79	14969	1844	12·3175	8·117
34	84667	921	1·0875	91·996	80	13125	1772	13·5021	7·407
35	83746	956	1·1419	87·564	81	11353	1675	14·8247	6·748
36	82790	979	1·1821	84·602	82	9678	1572	16·2427	6·158
37	81811	1005	1·2281	81·433	83	8106	1439	17·7563	5·631
38	80806	1035	1·2799	78·125	84	6667	1291	19·3654	5·165
39	79771	1067	1·3375	74·794	85	5376	1133	21·0700	4·746
40	78704	1103	1·4009	71·377	86	4243	970	22·8702	4·373
41	77601	1141	1·4700	68·027	87	3273	812	24·7975	4·032
42	76460	1171	1·5314	65·360	88	2461	661	26·8519	3·724
43	75289	1193	1·5851	63·092	89	1800	523	29·0335	3·445
44	74096	1209	1·6310	61·312	90	1277	400	31·3423	3·191
45	72887	1217	1·6692	59·916	91	877	296	33·7782	2·960
46	71670	1218	1·6997	58·823	92	581	208	35·8437	2·790
47	70452	1227	1·7419	57·405	93	373	140	37·5389	2·664
48	69225	1243	1·7960	55·679	94	233	91	38·8636	2·573
49	67982	1266	1·8619	53·706	95	142	57	39·8180	2·511
50	66716	1294	1·9397	51·546	96	85	34	40.4020	2·475
51	65422	1328	2·0292	49·285	97	51	22	44·1099	2·267
52	64094	1352	2·1096	47·393	98	29	15	51·1463	1·955
53	62742	1368	2·1808	45·851	99	14	8	51·3067	1·949
54	61374	1377	2·2428	44·583	100	6	6	75·0000	1·333
55	59997	1377	2·2956	43·554					

TABLE F *continued.*

TRADES NOT CLASSIFIED.—RURAL, TOWN AND CITY DISTRICTS.—*Males.*

Ages.	Living.	Dying.	Mortality. per Cent.	Specific. Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	250	·2499	400·000	56	66509	1335	2·0074	49·825
11	99750	249	·2499	400·000	57	65174	1383	2·1224	47·125
12	99501	265	·2667	374·532	58	63791	1431	2·2437	44·563
13	99236	298	·3004	333·333	59	62360	1479	2·3714	42·176
14	98938	347	·3508	284·900	60	60881	1525	2·5054	39·920
15	98591	412	·4181	239·234	61	59356	1570	2·6456	37·793
16	98179	493	·5022	199·203	62	57786	1630	2·8203	35·461
17	97686	557	·5701	175·439	63	56156	1701	3·0295	33·014
18	97129	604	·6216	160·771	64	54455	1782	3·2730	30·553
19	96525	634	·6568	152·207	65	52673	1871	3·5511	28·161
20	95891	648	·6758	147·929	66	50802	1963	3·8635	25·887
21	95243	646	·6785	147·493	67	48839	2060	4·2177	23·708
22	94597	646	·6824	146·628	68	46779	2158	4·6135	21·673
23	93951	646	·6876	145·349	69	44621	2254	5·0509	19·798
24	93305	648	·6942	144·092	70	42367	2343	5·5301	18·083
25	92657	650	·7020	142·450	71	40024	2422	6·0510	16·526
26	92007	654	·7112	140·647	72	37602	2453	6·5246	15·326
27	91353	659	·7212	138·696	73	35149	2443	6·9508	14·386
28	90694	664	·7320	136·612	74	32706	2397	7·3296	13·643
29	90030	670	·7437	134·409	75	30309	2322	7·6612	13·053
30	89360	676	·7563	132·275	76	27987	2224	7·9455	12·586
31	88684	683	·7697	129·870	77	25763	2148	8·3358	11·996
32	88001	690	·7837	127·551	78	23615	2086	8·8322	11·322
33	87311	697	·7983	125·313	79	21529	2031	9·4347	10·598
34	86614	705	·8136	122·850	80	19498	1982	10·1433	9·862
35	85909	713	·8294	120·627	81	17516	1919	10·9580	9·124
36	85196	721	·8458	118·203	82	15597	1817	11·6514	8·584
37	84475	731	·8649	115·607	83	13780	1684	12·2236	8·183
38	83744	743	·8868	112·740	84	12096	1533	12·6744	7·893
39	83001	756	·9113	109·769	85	10563	1374	13·0040	7·692
40	82245	772	·9386	106·496	86	9189	1214	13·2123	7·570
41	81473	789	·9686	103·199	87	7975	1118	14·0171	7·138
42	80684	808	1·0018	99·001	88	6857	1057	15·4183	6·485
43	79876	829	1·0380	96·339	89	5800	1010	17·4160	5·740
44	79047	852	1·0775	92·850	90	4790	958	20·0102	4·997
45	78195	876	1·1200	89·286	91	3832	889	23·2008	4·310
46	77319	901	1·1657	85·763	92	2943	783	26·5925	3·761
47	76418	932	1·2192	81·967	93	2160	644	29·8333	3·352
48	75486	967	1·2806	78·064	94	1516	501	33·0399	3·289
49	74519	1006	1·3497	74·074	95	1015	369	36·3588	2·750
50	73513	1049	1·4267	70·077	96	646	256	39·6498	2·522
51	72464	1095	1·5115	66·137	97	390	176	45·1555	2·215
52	71369	1143	1·6011	62·461	98	214	113	52·9127	1·890
53	70226	1191	1·6955	58·997	99	101	62	61·3067	1·631
54	69035	1239	1·7947	55·710	100	39	39	75·0000	1·333
55	67796	1287	1·8986	52·659					

An approximating value taking place up to about this period, after which they again diverge to near the extreme of life.

The population existing at Age 10 in Table C is halved between ages 62–3 ; while in Table F (Rural Districts) the same result is not determined till ages 68–9 ;—shewing under this aspect a superior vitality of six years.

If the results in Table F for the Town Districts be now inspected, it will be seen that the Specific intensity decreases in a regular series, from the beginning to the extreme of the Table. It will also appear that the Specific Intensity is higher than Male Life in Table C up to Age 52, and from that to age 76 it is less. From the latter age to the extreme of life, they cross each other. The following are the ages at which the corresponding Specific Intensities in both Tables are nearly equal.

Age	20	in C	corresponds with	Age 31	in F (Town Districts)
,,	30	,,	,,	41	,,
,,	40	,,	,,	45	,,
,,	50	,,	,,	50	,,
,,	60	,,	,,	58	,,
,,	70	,,	,,	68	,,
,,	80	,,	,,	82	,,

In Table F (Town Districts) it will be seen that half the population disappears between ages 64–5, and it has been shewn that in Table C the same result takes place at ages 62–3.

Turning next to the results for the City Districts in Table F, it will be seen that the Specific Intensity decreases from the earliest age to the other extreme of the Table, in a uniform series. In this Table it will also appear, that from the age of 10 to 33 there is a higher Specific Intensity than in Table C ; and from 33 to the extreme of life, the Specific Intensity in the City Districts of Table F is less than in the Male Life of Table C, which represents the general results for England and Wales. The following will shew the ages corresponding to equal specific intensities in both Tables :—

Age	20	in C	corresponds nearly with	age 25	in F (City Districts)
,,	30	,,	,,	33	,,
,,	40	,,	,,	37	,,
,,	50	,,	,,	46	,,
,,	60	,,	,,	59	,,
,,	70	,,	,,	69	,
,,	80	,,	,,	79	,,

Half of the population, it will be seen in Table F (City Districts), has died off between the

ages of 61 and 62, while among Males in England and Wales that happened at ages 62 and 63; being in this instance one year in favour of the Table for the General Results of the Country.

Taking a view of the three Districts respectively, as given in Table F, in conjunction with Table C, it will be seen that there is

A higher Specific Intensity in the Rural Districts up to the extreme of life, than in Table C,
" " Town Districts up to the Age of 52 "
" " City " " " 33 "

From this it would appear, that the lower the age of equal Specific Intensity, the worse the class of lives to which it refers. Another comparison of these three classes of results with Table C will shew the following series of Differences for the corresponding ages of Equal Specific Intensity:—

Age.	Rural Districts.	Town Districts.	City Districts.
20	19	11	5
30	17	11	3
40	10	5	3
50	5	0	— 4
60	3	— 2	— 1
70	1	— 2	— 1
Sums of the series of differences	55	23	5

This arrangement of the differences of corresponding periods of equal Specific Intensity also points out a gradual approximation to lower numbers, moving from the Rural towards the City Districts. And a third illustration of the same fact will be found in comparing the periods at which the equation of life is found for age 10. It is found in—

Table C	F—Rural Districts.	F—Town Districts.	F—City Districts.
At Ages 62—3	68—9	64—5	61—2
diff.	6 years.	2 years.	— 1 year.

As before stated, the illustrations drawn from the Specific Intensity must be understood to have reference to the identical periods only of life at which the comparisons are made, and not to the absolute value of life in any of the classes. It will, however, at all times, be found important to keep in view the specific intensity of such Tables, as it affords the readiest means to discover those periods at which any peculiar change or difference in the condition of life is taking place. Various diseases have a maximum or minimum effect in destroying life at certain periods; and if a change to a higher specific intensity were found to take place at any given period, the diseases peculiar to that period should be falling from their maximum towards the minimum.

In the three Districts now under consideration, it was found that in all except one, the Specific Intensity uniformly decreased from the beginning to the end of the Table; but in the Rural Districts the Specific Intensity was found to increase from ages 20–31. Some change, either in the Rural Districts, or uniformly in the two others, must therefore have taken place in the causes affecting the duration of life at that period; and if the nature of this paper led to an examination of the diseases generally prevalent at the same period, the probability is that Consumption and Diseases of the Chest would be found less malignant at that term of life, in relation to the preceding and subsequent periods of life, in the Rural than in either the Town or City Districts.

The next arrangement of the data to which reference will be made, is the Expectation of Life. This mode of expressing the Duration of Life is certainly that which is of the most interest to society; for it points out the average number of years which one member of the community with another participates in the pleasures and cares of life. The Expectation of Life is often confounded with the chance of living an equivalent number of years; but the distinction will be subsequently explained.

In Table G will be found the Expectation of Life for each of the three districts, and also the General Results for those three combined. A comparison of the expectation under the head "Rural Districts," with the expectation for Males in England and Wales, as given in Table D, will shew a much higher value of life in the Rural Districts throughout the whole range of the Table. At age 10 the difference is 5·5 years in favor of the Rural Districts, at 30 it is 4·3 years, and at 60 the difference is 2·1 years. The following arrangement of the results of the two tables, at decennial periods, will convey a general idea of their relative values of life:—

Age.	EXPECTATION.		Difference in favour of the Rural Districts.	
	Rural Districts.	England & Wales.	In Years.	Per Cent.
20	45.3550	40.6910	4.6640	11.462
30	38.4073	34.0990	4.3083	11.191
40	30.9724	27.4760	3.4964	12.725
50	23.4700	20.8463	2.6237	12.585
60	16.6524	14.5854	2.0670	14.171
70	10.9124	9.2176	1.6948	18.386

A comparison of the results for the Town Districts, will shew a superior expectation up to Age 35, after which period the expectation is in favour of Male Life, in the General Table for England and Wales. The following Abstract shews the results for decennial periods.

[The Expectation

Table G.

Expectation—Trades not Classified.—*Males.*

Ages.	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Ages.	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts
10	53·2581	50·5373	47·9129	51·8097	56	19·2867	16·0651	16·2599	18·2005
11	52·3797	49·6753	47·1014	50·9383	57	18·6181	15·4682	15·6373	17·5630
12	51·4638	48·8108	46·2870	50·0646	58	17·9163	14·8871	15·0154	16·9330
13	50·6269	47·9486	45·4728	49·1969	59	17·3014	14·3193	14·4009	16·3101
14	49·7733	47·0941	44·6620	48·3436	60	16·6524	13·7608	13·7685	15·6942
15	48·9480	46·2515	43·8482	47·5120	61	16·0089	13·2095	13·2177	15·0845
16	48·1593	45·4254	43·0645	46·7093	62	15·3705	12·6622	12·6593	14·4808
17	47·4163	44·6203	42·2834	45·9425	63	14·7424	12·1215	12·1221	13·8866
18	46·7086	43·8298	41·5195	45·2031	64	14·1284	11·5892	11·6033	13·3047
19	46·0249	43·0496	40·7630	44·4828	65	13·5330	11·0666	11·1005	12·7379
20	45·3550	42·2742	40·0148	43·7736	66	12·9589	10·5551	10·6113	12·1886
21	44·6890	41·4988	39·2711	43·0680	67	12·4093	10·0386	10·1330	11·6585
22	44·0170	40·7192	38·5295	42·3587	68	11·8847	9·5596	9·6657	11·1498
23	43·3385	39·9383	37·7889	41·6465	69	11·3856	9·1116	9·2093	10·6649
24	42·6543	39·1572	37·0506	40·9314	70	10·9124	8·7030	8·7636	10·2057
25	41·9631	38·5540	36·3177	40·2141	71	10·4654	8·3423	8·3279	9·7739
26	41·2649	37·6059	35·6725	39·4947	72	10·0451	8·0382	7·9013	9·3712
27	40·5603	36·8396	34·9598	38·7739	73	9·6458	7·7735	7·4840	8·9903
28	39·8486	36·0796	34·2557	38·0520	74	9·2622	7·5311	7·0759	8·6245
29	39·1308	35·3251	33·5569	37·3289	75	8·8893	7·2944	6·6761	8·2670
30	38·4073	34·5753	32·8603	36·6051	76	8·5218	7·0463	6·2840	7·9114
31	37·6787	33·8294	32·1632	35·8803	77	8·1548	6·7694	5·8977	7·5512
32	36·9448	33·0866	31·4698	35·1549	78	7·7962	6·4688	5·5216	7·1926
33	36·3078	32·3460	30·7815	34·4288	79	7·4530	6·1493	5·1596	6·8411
34	35·4654	31·6062	30·0995	33·7018	80	7·1317	5·8152	4·8143	6·5016
35	34·7211	30·8663	29·4251	32·9742	81	6·8395	5·4693	4·4877	6·1807
36	33·9748	30·1259	28·7590	32·2460	82	6·5804	5·1139	4·1778	5·8796
37	33·2268	29·3832	28·0972	31·5170	83	6·3354	4·7565	3·8911	5·5889
38	32·4771	28·6398	27·4404	30·7877	84	6·0853	4·4033	3·6230	5·2975
39	31·7257	27·8960	26·7900	30·0589	85	5·8105	4·0592	3·3730	4·9937
40	30·9724	27·1530	26·0873	29·3306	86	5·4905	3·7271	3·1401	4·6652
41	30·2173	26·4113	25·5109	28·6037	87	5·1082	3·4063	2·9226	4·2997
42	29·4598	25·6716	24·8841	27·8786	88	4·6845	3·1069	2·7219	3·9193
43	28·7018	24·9353	24·2634	27·1555	89	4·2447	2·8330	2·5378	3·5424
44	27·9440	24·2041	23·6460	26·4351	90	3·8091	2·5861	2·3724	3·1839
45	27·1880	23·4264	23·0299	25·7177	91	3·3844	2·3743	2·2263	2·8549
46	26·4340	22·7613	22·4125	25·0034	92	2·9879	2·2080	2·1059	2·5663
47	25·6837	22·0523	21·7913	24·2923	93	2·6169	2·0729	2·0013	2·3153
48	24·5489	21·3515	21·1687	23·5860	94	2·2665	1·9502	1·9034	2·0864
49	24·2000	20·6123	20·5466	22·8856	95	1·9394	1·8184	1·8028	1·8694
50	23·4700	19·9733	19·9271	22·1920	96	1·6446	1·6675	1·6765	1·6517
51	22·7485	19·2955	19·3113	21·5060	97	1·3795	1·4734	1·4607	1·4077
52	22·0379	18·6242	18·7011	20·8282	98	1·0668	1·2187	1·1896	1·1542
53	21·3371	17·9629	18·0933	20·1591	99	·8476	·9772	·9285	·8861
54	20·6484	17·3144	17·4464	19·4983	100	·5000	·5000	·5000	·5000
55	19·9623	16·6810	16·8753	18·8455					

Age.	EXPECTATION.		Difference in Favour of			
			Town Districts.		England and Wales.	
	Town Districts.	England & Wales.	In Years.	Per Cent.	In Years.	Per Cent.
20	42.2742	40.6910	1.5832	3.888		
30	34.5753	34.0990	0.4763	1.397		
40	27.1530	27.4760	.....	.....	0.3230	1.176
50	19.9733	20.8463	.....	.....	0.8730	4.188
60	13.7608	14.5854	.....	.....	0.8246	5.653
70	8.7030	9.2176	.....	.....	0.5146	5.582

The Expectation of Life in the City Districts will be found to be less than in Table D, from age 12 upwards. At 20 the difference is ·68 years, at 40 it is 1·39 years, and at 60 the difference is ·82 years in favour of the general value of Male Life in Table D. The following gives a comparative view of both Tables:—

Age.	EXPECTATION.		Difference in Favour of England & Wales.	
	City Districts.	England & Wales.	In Years.	Per Cent.
20	40·0148	40·6910	0·6762	1·664
30	32·8603	34·0990	1·2387	3·632
40	26·0873	27·4760	1·3887	5·054
50	19·9271	20·8463	0·9192	4·409
60	13·7685	14·5854	0·8169	5·608
70	8·7636	9·2176	0 4540	4·092

The comparative value of life in the three districts at decennial periods will be seen by an inspection of the following Table; the 6th and 8th columns of which will point out the gradual decrease in the value of Life in moving from the Rural to the Town, and from the Town to the City Districts:—

Age.	EXPECTATION OF LIFE.			Excess in Favour of Rural, over			
				Town Districts.		City Districts.	
	Rural.	Town.	City.	In Years.	Per Cent.	In Years.	Per Cent.
20	45·3550	42·2742	40·0148	3·0808	6·790	5.3402	11·774
30	38·4073	34·5753	32·8603	3·8320	9·977	5·5470	14·442
40	30·9724	27·1530	26·0873	3·8194	12·331	4·8851	15·772
50	23·4700	19·9733	19·9271	3·4967	14·900	3·5429	15·100
60	16·6524	13·7608	13·7685	2·8916	17·364	2·8837	17·318
70	10·7124	8·7030	8·7636	2·2094	20·246	2·1488	19·691
Total Excess				19·3299	.....	24·3479	

The next arrangement of this kind which will be brought under notice is the Expectation of Life as derived from the combination of all the data composing the three Districts now referred to; and may be understood to represent the general value of Male Life as it exists among the Members of the Community composing Friendly

Societies. Throughout the whole range of this Table the Expectation of Life is found to be higher than among the male population of the country generally. A glance at the following abridgment of Table G, for the three Districts, will shew the difference at the given periods of life:—

Age.	EXPECTATION IN		Difference in Favour of the Three Districts.	
	Three Districts.	England and Wales.	In Years.	Per Cent.
20	43·7736	40·6910	3·0826	7·575
30	36·6051	34·0990	2·5061	7·349
40	29·3306	27·4760	1·8546	6·750
50	22·1920	20·8463	1·3457	6·455
60	15·6942	14·5854	1·1088	7·602
70	10·2057	9·2176	0·9881	10·720

A very important distinction is here found to prevail between the value of life in the two Tables. The circumstances in which the humble and working population of the country is placed, have generally been thought adverse to a prolonged duration of life; but the healthiest Life Tables hitherto formed have not shewn any thing so favourable as the present results, even among what are generally considered the select classes of Society:—

It may be well to be understood here, that the persons composing Friendly Societies are almost exclusively the hard-working members of the community, chiefly occupied in the drudgeries and toils of the mechanic arts, and consequently exposed to the inclemencies of seasons, excesses of temperature, impure atmospheres, constrained postures, and other conditions usually thought objectionable. Their incomes are very limited, affording but the scantiest and simplest means of support. Their habitations are of an inferior order, being of the cheapest kind, and consequently in the worst streets. The Members of Friendly Societies are therefore generally placed in those circumstances which persons habituated to the luxuries of the upper ranks of society would regard as unfavourable to health and a superior duration of life. In making these remarks, however, it is necessary, as will hereafter be seen, to make a distinction between them, and the great bulk of the poorer classes of the country. For an individual to remain a Member of a Friendly Society, it is required that he should make his weekly or monthly contribution to its funds; and although a few pence is all that is needed, it presumes on a certain amount of frugality and industrial habit, sufficient to separate him from the reckless and improvident person, who is more openly exposed to the vicissitudes — poverty, distress, destitution and disease—incidental to fluctuations in the demand for labour.

The superior value of life among the Members of Friendly Societies is a very remarkable and important feature in this inquiry, and is a result that generally would not have

been anticipated; and the question which naturally follows is, From what source or class does the excess of mortality, which makes up the general average of the community, arise?

Those persons having transactions with the Assurance Companies belong, with a very few exceptions, either to the middle or the higher ranks of society; and if the value of life, as deduced from observations in those Companies, be admitted as a correct measure for such classes, it will be found that their duration of life is not only less than among the Members of Friendly Societies, but also less than in the country generally.

In Table H, No. 5, col. 2nd, the Expectation of Life is given as deduced from the aggregate observations of Assurance Companies, and includes both sexes; but col. 1st (Males d 1) of the same Table relates to Male Lives only, and is consequently that which should be brought into comparison with the results of this inquiry.

It may be said, in reply to some of the preceding observations, that the superior value of life in the ranks of Friendly Societies, above the general community, is owing to the effects of selection; but a little reflection will shew that the difference must be produced by other causes. Every reasonable means is adopted to test the lives admitted into Assurance Companies, and yet they appear to be of less value than the general average of the country; and Friendly Societies are known *not* to exercise the same degree of scrutiny. In both, the interest of the applicant for admisssion is opposed to that of the Society; and, looking at the results, it is not unlikely that the vigilance of the one may be neutralized by the interests of the other. Another result brought out by the observations on the lives in Assurance Offices will shew how inadequate the means of selection usually resorted to are to raise the standard of life above the average of the country. All other inquiries hitherto made on Male and Female Life have tended to attach a greater value to the latter than to the former; but the results in the Assurance Companies have been reversed, shewing that some other causes, beyond the method of selection, must have interfered to modify the state of health; for if the means of scrutiny had been adequate to determine the actual character and condition of health, the prevailing feature of each sex would have manifested itself, and the anomalous results of Male Life being of higher absolute value than Female Life not appeared.

Assurance Companies, it has been stated, are likely to have proposals most freely from among unhealthy persons for sums payable at death; but that proposals for annuities, or sums payable during life, will be made on the lives of the most healthy only; and that the private opinion of the individual being always brought to bear against the Company, the effects of selection under this aspect ought to prevent the results of such observations from being regarded as a true exponent of the value of life in the class of society generally to which those persons belong. There exists no published document, so far as Assurance Offices are concerned, to shew whether this opinion is well founded: but there is evidence of the same kind—of equal, or perhaps, from its

[greater

Table H.

Expectation of Life.

Ages.	No. 1. Friendly Societies. Females. Rural, Town & City.	No. 2. Friendly Societies. Males. Liverpool.	No. 3. Peerage.	Ages.	No. 1. Friendly Societies. Females. Rural, Town & City.	No. 2. Friendly Societies. Males. Liverpool.	No. 3. Peerage.
10	49·4925	46·0009	... ...	56	19·9582	14·0881	14·6308
11	49·1826	45·1818	... ...	57	19·2966	13·5449	14·0970
12	48·8685	44·3597	... ...	58	18·6222	12·9960	13·5737
13	48·5413	43·5377	... ...	59	17·9358	12·4621	13·0637
14	48·1921	42·7188	... ...	60	17·2380	11·9626	12·5671
15	47·8130	41·9006	... ...	61	16·5294	11·5151	12·1091
16	47·3949	41·1034	... ...	62	15·8112	11·1372	11·6080
17	46·9305	40·3122	... ...	63	15·0965	10·8097	11·1420
18	46·4196	39·5276	... ...	64	14·3974	10·5137	10·6830
19	45·8639	38·7437	... ...	65	13·7245	10·2321	10·2303
20	45·2640	37·9553	38·4750	66	13·0869	9·9467	9·7857
21	44·6198	37·1574	37·6614	67	12·4924	9·6407	9·3518
22	43·9342	36·3453	36·9640	68	11·9420	9·3156	8·9325
23	43·2191	35·5277	36·1016	69	11·4333	8·9733	8·5321
24	42·4872	34·7124	35·3445	70	10·9750	8·6156	8·1506
25	41·7504	33·9067	34·5967	71	10·5603	8·2435	7·7873
26	41·0194	33·1189	33·8543	72	10·1940	7·8582	7·4405
27	40·3056	32·3541	33·1200	73	9·8569	7·4648	7·1102
28	39·6003	31·6069	32·3912	74	9·5314	7·0681	6·7941
29	38·8956	30·8719	31·6535	75	9·2001	6·6720	6·4866
30	38·1841	30·1437	30·8760	76	8·8460	6·2793	6·1883
31	37·4589	29·4175	30·2306	77	8·4525	5·8923	5·8996
32	36·7129	28·6887	29·5153	78	8·0339	5·5159	5·6204
33	35·9540	27·9612	28·8023	79	7·6031	5·1531	5·3506
34	35·1899	27·4392	28·0900	80	7·1725	4·8067	5·0884
35	34·4280	26·5260	27·3790	81	6·7518	4·4792	4·8389
36	33·6748	25·8251	26·6700	82	6·3502	4·1715	4·6016
37	32·9367	25·1392	25·9690	83	5·9622	3·8835	4·3799
38	32·2103	24·4666	25·1590	84	5·5817	3·6138	4·1770
39	31·4929	23·8050	24·5830	85	5·2026	3·3621	3·9958
40	30·7813	23·1524	24·4500	86	4·8192	3·1255	3·8400
41	30·0735	22·5069	23·2420	87	4·4232	2·9042	3·7117
42	29·3664	21·8666	22·5921	88	4·0015	2·6978	3·6076
43	28·6606	21·2331	21·9635	89	3·5969	2·5047	3·5084
44	27·9567	20·6073	21·3520	90	3·2186	2·3524	3·4044
45	27·2551	19·9908	20·9494	91	2·8732	2·1971	3·2729
46	26·5564	19·3839	20·1742	92	2·5662	2·0602	3·1161
47	25·8611	18·6879	19·6039	93	2·3144	1·9423	2·8989
48	25·1717	18·2059	19·0404	94	2·0862	1·8292	2·6338
49	24·4905	17·6405	18·4803	95	1·8684	1·7062	2·3720
50	23·8200	17·0946	17·9221	96	1·6495	1·5526	2·1159
51	23·1610	16·5705	17·7590	97	1·4043	1·3750	1·8689
52	22·5164	16·0706	16·8121	98	1·1506	1·1469	1·6363
53	21·8795	15·5834	16·2270	99	·8869	·8750	1·4231
54	21·2445	15·0975	15·7137	100	·5000	·5000	1·2142
55	20·6060	14·6024	15·1722				

TABLE H, *continued.*

EXPECTATION OF LIFE.

Ages.	No. 4. Friendly Societies. 16 Trades. Rural Districts. Males.	No. 5. Life Assurance Offices.		No. 6. Government. Males.	Ages.	No. 4. Friendly Societies. 16 Trades. Rural Districts. Males.	No. 5. Life Assurance Offices.		No. 6. Government. Males.
		Males *d* 1	Aggregate.				Males *d* 1	Aggregate.	
10	52·0363	... ...	... ...	44·2721	56	18·8093	15·66	16 3	15·7971
11	51·1551	... ...	... ...	43·5540	57	18·1542	15·09	15·62	15·2060
12	50·3863	... ...	... ...	42·8244	58	17·5052	14·45	14·98	14·6188
13	49·3939	... ...	... ...	42·0745	59	16·8639	13·99	14·38	14·0444
14	48·5297	... ...	... ...	41·3130	60	16·2322	13·47	13·81	13·4830
15	47·6860	... ...	... ...	40·5612	61	15·6110	12·09	13·24	12·9379
16	46·8692	... ...	... ...	39·8399	62	15·0020	12·46	12·68	12·4099
17	46·0858	... ...	... ...	39·1568	63	14·4084	11·90	12·09	11·8913
18	45·3321	... ...	... ...	38·5202	64	13·8333	11·27	11·50	11·3770
19	44·6041	... ...	... ...	37·9383	65	13·2795	10·87	11·03	10·8672
20	43·8978	39·84	40·97	37·4079	66	12·7495	10·38	10·51	10·3682
21	43·2102	39·29	40·45	36·9217	67	12·2454	9·93	10·03	9·8927
22	42·5377	38·70	39·92	36·4565	68	11·7598	9·33	9·46	9·4497
23	41·8756	37·98	39·18	36·0047	69	11·2856	8·81	8·99	9·0381
24	41·2197	37·41	38·54	35·5502	70	10·8160	8·34	8·50	8·6547
25	40·5657	36·63	37·84	35·0806	71	10·3441	7·88	8·13	8·2894
26	39·9096	35·88	37·13	34·5912	72	9·8643	7·43	7·72	7·9333
27	39·2472	35·23	36·42	34·0772	73	9·3862	6·97	7·26	7·5716
28	38·5785	34·63	35·76	33·5421	74	8·9188	6·57	6·84	7·1992
29	37·9028	33·96	35·06	32·9896	75	8·4698	6·03	6·46	6·8215
30	37·2237	33·17	34·25	32·4192	76	8·0465	5·63	6·08	6·4411
31	36·5380	32·44	33·50	31·8346	77	7·6552	5·48	5·77	6·0660
32	35·8464	31·73	32·75	31·2315	78	7·2976	5·16	5·37	5·7074
33	35·1492	30·92	31·98	30·6097	79	6·9750	4·99	5·07	5·3810
34	34·4464	30·21	31·27	29·9689	80	6·6900	4·75	4·75	5·0857
35	33·7378	29·52	30·55	29·3167	81	6·4455	... ...	... ...	4·8093
36	33·0235	28·87	29·90	28·6648	82	6·2459	... ...	... ...	4·5293
37	32·3035	28·15	29·20	28·0170	83	6·0681	... ...	... ...	4·2540
38	31·5766	27·49	28·51	27·3846	84	5·8879	... ...	... ...	3·9906
39	30·8416	26·81	27·79	26·7676	85	5·6791	... ...	... ...	3·7427
40	30·0976	26·06	27·07	26·1511	86	5·4152	... ...	... ...	3·5156
41	29·3439	25·42	26·41	25·5311	87	5·0692	... ...	... ...	3·3039
42	28·5795	24·70	25·68	24·9037	88	4·6659	... ...	... ...	3·1203
43	27·8121	24·00	24·98	24·2616	89	4·2354	... ...	... ...	2·9693
44	27·0490	23·34	24·26	23·6006	90	3·8023	... ...	... ...	2·8233
45	26·2370	22·63	23·55	22·9172	91	3·3764	... ...	... ...	2·6531
46	25·5610	21·98	22·85	22·2182	92	2·9791	... ...	... ...	2·4718
47	24·8486	21·24	22·12	21·5103	93	2·6054	... ...	... ...	2·3000
48	24·1539	20·62	21·41	20·8035	94	2·2512	... ...	... ...	2·0714
49	23·4722	20·08	20·79	20·1108	95	1·9194	... ...	... ...	1·7917
50	22·7993	19·41	20·11	19·4414	96	1·6126	... ...	... ...	1·4375
51	22·1305	18·73	19·46	18·7984	97	1·3285	... ...	... ...	1·0000
52	21·4622	18·05	18·79	18·1784	98	1·0655	... ...	... ...	·5000
53	20·7949	17·40	18·16	17·5754	99	·8415	... ...	... ...	... ...
54	20·1302	16·77	17·50	16·9800	100	·5000	... ...	... ...	... ...
55	19·4680	16·21	16·83	16·3893					

greater extent, of higher value than any to be drawn from the Assurance Companies; it turns out, however, that assured lives are of greater instead of less value than those of annuitants. The tables calculated by Mr. Finlaison, on the lives among the nominees of the Government Tontines and Annuity schemes, are here alluded to. The facts over which his observations extended possessed almost every advantage that could be desired; and, considering the acknowledged skill and care with which his computations were managed, the Government Table must be entitled to the highest confidence, and the Expectation of Life thence deduced regarded as the true measure of life in that particular class of society.

Table H, No. 6, has been recalculated for the present paper from the facts given by Mr. Finlaison at page 67 of his Report on Life Annuities in March 1829—being the combined results of six different classes of observations on male lives. That usually quoted as the Expectation Table of the Government Annuitants, is the one calculated by Mr. Finlaison in 1825, and differs in some important particulars from his subsequent and revised data in 1829. This table, then, will shew that the male lives selected for the Government Annuities are not only of less duration than the male population of the country generally, and are also of less value than lives in Assurance Companies, but are actually shorter lived than the members of Friendly Societies in the City Districts. It is evident from those results, that the presumed power of the individual to judge of his own state of health has not shewn the remarkable effects anticipated: there is more reason to believe that the natural inclination with which every person is led to look upon his life as good, will very much influence any power of discrimination on his own chances of longevity. It is, however, to be kept in view, that persons of decidedly bad health will rarely purchase annuities; and the exclusion of these has, no doubt, some effect in slightly raising the standard of the table. A similar observation is also to be made with respect to the applicants to Assurance Companies. There is a strong temptation for those in really bad, or at least in indifferent health, to offer themselves for assurance; and if all were admitted, no doubt a lower value would be expressed by the results in Table H, No. 5. The known caution, however, usually exercised in these matters, and the medical talent brought to the aid of the Offices, is a protection against the very worst lives of that class; about 23 per cent. of the applicants being the average number rejected.

Friendly Societies, although not equally solicitous, are still not without tests for the admission of Members, and they possess one advantage over Assurance Companies; the Members, and those likely to be candidates, are generally intimately known in their daily habits and ordinary health to each other; and where evidently bad health exists, admission is refused. A consideration of all that has been advanced will shew that the greater vitality among Members of Friendly Societies cannot be accounted for by the superior mode in the selection of lives; for, if that argument were carried out to its full extent,

it would go to prove that the other classes in question had, in that respect, the advantage. The blessing thus bestowed on the frugal and industrious workmen of the country composing Friendly Societies, in having granted them, as appears by the present inquiry, a prolonged duration of life, must therefore be regarded as a really true and distinctive feature of that class of persons, and is, no doubt, the result of their simple and uniform habits of life, and the more regular and natural physical exercises to which they are habituated.

If the nature of the present paper led to a further investigation of this point, it could be clearly shewn, by tracing the various classes of society in which there exists sufficient means of subsistence, beginning with the most humble, and passing on to the middle and upper classes, that a gradual deterioration in the duration of life takes place; and that just as life, with all its wealth, pomp, and magnificence, would seem to become more valuable and tempting, so are its opportunities and chances of enjoyment lessened. As far as the results of figures admit of judging, this condition would seem to flow directly from the luxuriant and pampered style of living among the wealthier classes, whose artificial habits interfere with the nature and degree of those physical exercises which, in a simpler class of society, are accompanied with a long life.

Thus far, then, it is plain that the amount of life enjoyed by the middle and upper classes tends rather to depreciate than elevate the standard deduced from the general results of the country. And carrying this out still further, and viewing the value of life in the highest ranks of society—namely, the peerage and baronetage—as given in the recent and very interesting paper submitted by Dr. Guy, it will be seen that the Expectation of Life is not only less than in the general community, but also very much below the measure of life *among the Members of Friendly Societies in the* City Districts. The expectation of life in the peerage will be found in Table H, No. 3. It may then be conclusively admitted, that the standard of life in the general community is not elevated in any way by the influence of the middle or upper classes. With regard to the very highest ranks, the opposite conclusion must be come to; but as the numbers of the nobility are relatively small, the inferior value of life there shewn is not sufficient to account for the reduction of the scale for the general community so much below the average standard of all classes in Friendly Societies.

It hence follows that the excess of mortality in the general community must fall on the residue of the people; and although at present there exists no direct means of measuring the precise value of life in that portion of the population, it is evident that an inferential one of equal importance is immediately available.

Admitting that the preceding Tables form a correct representation of the value of life in the respective classes, it will be easy to arrive at the value of life in the remaining class; for—

Let Table A represent the rate of mortality in the general community—viz. over all England and Wales;

And let b = rate of mortality in one class—viz. Friendly Societies—and forming a part of A or included in it;—Also

Let c = rate of mortality in a second class—viz: the middle and upper classes, and also included in A;—then it is evident that

A — (b + c) = the rate of mortality in the remaining class, composing the Community. And this latter class includes the improvident and reckless, the poor and the destitute, who are exposed to the inclemencies of the seasons, the fluctuations of trade, and fall victims to epidemical and other diseases. Subsequent illustrations will more clearly establish this fact, when the question of large towns or cities is brought under consideration.

In making the preceding comparisons of the mortality of the Rural, Town, and City Districts respectively, with the average results for the whole population of England and Wales, no further corrections of the figures than those described were needed; but before bringing the table representing the combined results of the three districts into comparison with the mortality of the whole population of the country, it would have been important to be enabled to apply a further correction to the elementary data.

An inspection of the arrangement of the data presented in Table E will shew, that if

R, T, and C, represent the population over which the observations in that Table extend, for the Rural, Town, and City Districts respectively and

r, t, and c represent the number of deaths in the same population for the respective districts at each period of life;

then the mortality per cent., and consequently all subsequent results for the average of the three districts, or rather the three districts combined, as set forth in Table E, is derived from—

$$\frac{(r + t + c) \cdot 100}{R + T + C}$$

This is the usual mode by which general averages for various classes of lives have been hitherto determined; but it is evident that unless R, T, and C, bear the same ratio to each other which the whole population of the districts they represent do to each other, the average results cannot be true.

This fact may be rendered more intelligible by the following hypothetical illustration. Suppose at any given age the population over which the actual observations extend was 100 for each of the three districts, viz:—

For District	R = 100	Annual Deaths	2
„	T = 100	„	3
„	C = 100	„	4
R + T + C =	300	„	9

then the average result thus derived would shew a mortality of 3 per cent.; but if the whole population of those districts had been to each other in any other relation than an equality of numbers—say 100, 50, and 25—then the number of deaths would have become 2, 1·5, and 1, respectively: consequently the correct average mortality would have been 2·571 per cent. instead of 3 per cent.

The following mode of obtaining a correct average has also been suggested, but it is obvious that it would involve errors of a more serious nature than the common method employed.

$$\frac{\frac{r \cdot 100}{R} + \frac{t \cdot 100}{T} + \frac{c \cdot 100}{C}}{3}$$

A single illustration will be adequate to point out the fallacies of this.

At age 40—45 the actual mortality of the Rural Districts is ·8361 per cent:

„	„	Town Districts	1·0637	„
„	„	City Districts	1·6084	„
		Average for the three	1·1694	

But supposing the actual population of the whole of each district at that age was in the ratio of 82763, 34220 and 25428, which are the actual numbers in Table E at this term of life, then the correct average mortality of the whole kingdom would be 1·0287 per cent. but the above result was ... ... 1·1694

Difference 0·1407 or an error on the amount of the true result of 13·7766 per cent.

Although TABLE E, for all the Districts combined, is a correct measure of the average mortality of Friendly Societies in England and Wales, being composed of the actual numbers in those Districts, and in this respect perfect for the purposes of Friendly Societies; yet, unless the numbers representing, at particular years of age, each of the three Districts in TABLE E, bear the same ratio to the combined Districts of that Table, at the same ages which the actual population of the country in each of these Districts has to the whole population of the country at those ages, corrections would be required for purposes of comparison with the general mortality of the kingdom. But for the same reasons that the corrections suggested would improve the Table for comparison with the general mortality of the country, would they also injure the results for the purpose of Friendly Societies. It would, therefore, be better to have the facts under both forms.

As stated in the early part of this paper, if the districts of the Census Commissoners and Registrar-General had been coincident or coterminous, the labor of determining the population at each term of life for the three corresponding Districts would have been well repaid.

As already stated, these observations do not in any way affect the Rates of Mortality as represented in any one District, but affect the combined results for the three Districts only. So far as any individual District is concerned, or the comparison of one District with another, or with the general mortality for the whole kingdom, those objections do not apply, for in respect of locality simple elements only enter into the data of each district.

To some it may appear that too much importance has been given to the nature of this error; but as it so constantly enters, under some aspect or other, into nearly all inquiries into Vital Statistics, frequently producing errors of considerable magnitude, it has been deemed necessary to allude to it at length.

The distinction between the Rates of Mortality in the three Districts has been already pointed out; and so far as a single expression of the value of life among those classes, in given Districts, is required, nothing more is needed; and the difference between the tables will shew the relative value of life in the given Districts. Hitherto it has been thought sufficient to rest at this stage in all inquiries into the influence of locality on the Duration of Life, and to assign the difference thus appearing in the value of life between the respective Districts to the peculiar influence of Town or City Life. Other causes than locality will, however, be shewn to influence the Duration of Life.

If the data composing the facts presented in the preceding Tables be analysed, so as to distinguish one employment from another, it will be found that some occupations are much more healthy than others. The first evidence of this to be brought forward will be confined to the Rural Districts. An inspection of Table I, which represents the Mortality of Labourers in the Rural Districts, chiefly agricultural labourers, will shew a much higher specific intensity to the age of 80 than the general results for all employments in the Rural Districts; the specific intensity of Labourers, however, decreases in a gradual and regular series from the youngest ages in the Table, following the rule of the general results of the other Districts, and not presenting the apparent anomaly of the general results for the Rural Districts by shewing an increasing specific intensity from twenty to thirty-one years of age. It will be found that the specific intensity of the General Results for the Rural Districts—

At Age	20	in Table F, is as high as age	41	for Labourers in Table I;	
,,	30	,,	41	,,	
,,	40	,,	44	,,	
,,	50	,,	54	,,	
,,	60	,,	64	,,	
,,	70	,,	72	,,	

[The Population

Table I, No. 1.

Rural Districts.—Labourers.—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	230	·2300	434·783	56	73583	1043	1·4174	70·572
11	99770	229	·2300	434·783	57	72540	1081	1·4904	67·114
12	99541	243	·2438	410·172	58	71459	1110	1·5535	64·350
13	99298	270	·2715	368·324	59	70349	1130	1·6067	62·228
14	99028	310	·3130	319·489	60	69219	1142	1·6501	60·606
15	98718	364	·3684	271·444	61	68077	1146	1·6835	59·382
16	98354	430	·4377	228·467	62	66931	1192	1·7801	56·180
17	97924	486	·4965	201·410	63	65739	1275	1·9399	51·546
18	97438	531	·5448	183·554	64	64464	1394	2·1628	46·232
19	96907	565	·5827	171·615	65	63070	1545	2·4489	40·833
20	96342	588	·6102	163·881	66	61525	1722	2·7981	35·740
21	95754	601	·6273	159·413	67	59803	1894	3·1676	31·566
22	95153	605	·6363	157·159	68	57909	2060	3·5573	28·114
23	94548	602	·6372	156·937	69	55849	2216	3·9673	25·208
24	93946	592	·6302	158·680	70	53633	2359	4·3975	22·738
25	93354	574	·6151	162·575	71	51274	2486	4·8480	20·627
26	92780	549	·5919	168·948	72	48788	2563	5·2532	19·037
27	92231	530	·5746	174·034	73	46225	2595	5·6130	17·816
28	91701	516	·5632	177·557	74	43630	2586	5·9276	16·869
29	91185	508	·5576	179·340	75	41044	2543	6·1967	16·137
30	90677	506	·5578	179·276	76	38501	2472	6·4205	15·574
31	90171	508	·5638	177·368	77	36029	2472	6·8614	14·575
32	89663	511	·5699	175·469	78	33557	2523	7·5194	13·300
33	89152	514	·5761	173·581	79	31034	2605	8·3945	11·912
34	88638	516	·5824	171·703	80	28429	2698	9·4887	10·539
35	88122	519	·5887	169·866	81	25731	2778	10·7980	9·259
36	87603	521	·5950	168·067	82	22953	2691	11·7226	8·532
37	87082	529	·6076	164·582	83	20262	2485	12·2626	8·157
38	86553	542	·6265	159·617	84	17777	2208	12·4180	8·051
39	86011	560	·6515	153·492	85	15569	1897	12·1867	8·203
40	85451	583	·6828	146·456	86	13672	1582	11·5728	8·643
41	84868	596	·7203	138·831	87	12090	1384	11·4485	8·734
42	84272	634	·7522	132·943	88	10706	1282	11·9761	8·347
43	83638	651	·7785	128·452	89	9424	1240	13·1556	7·599
44	82987	663	·7992	125·125	90	8184	1212	14·8092	6·752
45	82324	670	·8143	122·805	91	6972	1207	17·3142	5·777
46	81654	673	·8238	121·389	92	5765	1163	20·1724	4·958
47	80981	684	·8445	118·413	93	4602	1080	23·4758	4·259
48	80297	704	·8762	114·129	94	3522	973	27·6246	3·620
49	79593	732	·9191	108·802	95	2549	837	32·8260	3·046
50	78861	767	·9732	102·754	96	1712	670	39·1324	2·556
51	78094	811	1·0383	96·339	97	1042	490	47·0458	2·125
52	77283	856	1·1070	90·334	98	552	319	57·7774	1·731
53	76427	901	1·1793	84·818	99	233	154	66·0370	1·514
54	75526	948	1·2551	79·681	100	79	79	85·0000	1·176
55	74578	995	1·3345	74·906					

Table I, No. 2.

Rural, Town and City Districts.—Clerks.—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	396	·3961	252·462	56	42418	2422	5·7089	17·516
11	99604	395	·3961	252·462	57	39996	2506	6·2646	15·962
12	99209	401	·4038	247·647	58	37490	2464	6·5720	15·216
13	98808	414	·4193	238·493	59	35026	2323	6·6310	15·081
14	98394	435	·4425	225·989	60	32703	2107	6·4416	15·523
15	97959	464	·4735	211·193	61	30596	1837	6·0038	16·656
16	97495	499	·5123	195·198	62	28759	1631	5·6694	17·640
17	96996	576	·5937	168·435	63	27128	1475	5·4385	18·386
18	96420	692	·7180	139·276	64	25653	1362	5·3110	18·829
19	95728	847	·8849	113·007	65	24291	1284	5·2870	18·914
20	94881	1039	1·0946	91·324	66	23007	1235	5·3665	18·632
21	93842	1264	1·3470	74·239	67	21772	1201	5·5167	18·126
22	92578	1464	1·5813	63·251	68	20571	1180	5·7377	17·428
23	91114	1638	1·7973	55·648	69	19391	1169	6·0295	16·584
24	89476	1785	1·9952	50·125	70	18222	1153	6·3291	15·645
25	87691	1907	2·1749	45·977	71	17069	1165	6·8255	14·650
26	85784	2004	2·3365	42·790	72	15904	1161	7·2988	13·701
27	83780	2026	2·4184	41·356	73	14743	1152	7·8120	12·801
28	81754	1979	2·4208	41·305	74	13591	1137	8·3651	11·955
29	79775	1870	2·3436	42·662	75	12454	1116	8·9582	11·163
30	77905	1704	2·1868	45·725	76	11338	1088	9·5911	10·426
31	76201	1486	1·9505	51·256	77	10250	1062	10·3620	9·653
32	74715	1317	1·7629	56·722	78	9188	1036	11·2708	8·873
33	73398	1192	1·6240	61·576	79	8152	1004	12·3175	8·117
34	72206	1108	1·5340	65·189	80	7148	965	13·5021	7·407
35	71098	1061	1·4927	66·979	81	6183	917	14·8247	6·748
36	70037	1051	1·5002	66·667	82	5266	855	16·2430	6·158
37	68986	1065	1·5431	64·809	83	4411	783	17·7573	5·631
38	67921	1101	1·6215	61·652	84	3628	703	19·3673	5·162
39	66820	1160	1·7354	57·637	85	2925	616	21·0732	4·746
40	65660	1238	1·8847	53·050	86	2309	528	22·8750	4·371
41	64422	1333	2·0694	48·333	87	1781	442	24·8032	4·032
42	63089	1388	2·1997	45·455	88	1339	360	26·8580	3·723
43	61701	1404	2·2754	43·956	89	979	284	29·0393	3·444
44	60297	1385	2·2967	43·535	90	695	218	31·3471	3·190
45	58912	1333	2·2634	44·189	91	477	161	33·7814	2·960
46	57579	1253	2·1756	45·956	92	316	114	36·0243	2·776
47	56326	1215	2·1572	46·361	93	202	77	38·0758	2·626
48	55111	1217	2·2083	45·290	94	125	50	39·9359	2·504
49	53894	1255	2·3287	42·937	95	75	31	41·6047	2·404
50	52639	1326	2·5186	39·698	96	44	19	43·0820	2·321
51	51313	1426	2·7780	35·997	97	25	12	47·3179	2·113
52	49837	1570	3·1462	31·786	98	13	7	53·9970	1·852
53	48317	1751	3·6235	27·594	99	6	4	61·3067	1·631
54	46566	1960	4·2097	23·753	100	2	2	75·0000	1·333
55	44606	2188	4·9048	20·387					

Table I, No. 3.

Rural, Town and City Districts.—Plumbers, Painters, &c.—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	350	·3499	285·796	56	51301	1952	3·8051	26·281
11	99650	349	·3499	285·796	57	49349	1933	3·9167	25·530
12	99301	416	·4192	238·550	58	47416	1956	4·1240	24·248
13	98885	552	·5579	179·244	59	45460	2021	4·4467	22·487
14	98333	753	·7659	130·565	60	43439	2131	4·9050	20·387
15	97580	1018	1·0432	95·877	61	41308	2263	5·4789	18·252
16	96562	1342	1·3899	71·942	62	39045	2345	6·0046	16·653
17	95220	1538	1·6148	61·920	63	36700	2386	6·5022	15·380
18	93682	1609	1·7179	58·207	64	34314	2385	6·9518	14·384
19	92073	1565	1·6993	58·858	65	31929	2341	7·3332	13·637
20	90508	1411	1·5588	64·144	66	29588	2268	7·6666	13·043
21	89097	1155	1·2966	77·101	67	27320	2154	7·8836	12·684
22	87942	961	1·0932	91·491	68	25166	2009	7·9844	12·525
23	86981	825	·9485	105·430	69	23157	1845	7·9689	12·549
24	86156	743	·8627	115·915	70	21312	1670	7·8371	12·760
25	85413	714	·8357	119·660	71	19642	1491	7·5890	13·177
26	84699	735	·8674	115·287	72	18151	1352	7·4474	13·428
27	83964	776	·9246	108·155	73	16799	1245	7·4122	13·492
28	83188	838	1·0071	99·305	74	15554	1164	7·4835	13·362
29	82350	918	1·1150	89·686	75	14390	1103	7·6612	13·053
30	81432	1016	1·2482	80·128	76	13287	1061	7·9455	12·585
31	80416	1131	1·4068	71·073	77	12226	1019	8·3358	11·996
32	79285	1195	1·5068	66·357	78	11207	990	8·8322	11·322
33	78090	1209	1·5480	64·599	79	10217	964	9·4347	10·600
34	76881	1177	1·5306	65·317	80	9353	949	10·1433	9·862
35	75704	1101	1·4546	68·729	81	8404	921	10·9580	9·124
36	74603	985	1·3198	75·758	82	7483	872	11·6514	8·584
37	73618	908	1·2335	81·103	83	6611	808	12·2236	8·183
38	72710	869	1·1956	83·612	84	5803	736	12·6744	7·893
39	71841	867	1·2062	82·919	85	5067	659	13·0040	7·692
40	70974	898	1·2651	79·051	86	4408	582	13·2123	7·570
41	70076	962	1·3725	72·833	87	3826	536	14·0171	7·133
42	69114	987	1·4287	69 979	88	3290	507	15·4183	6·485
43	68127	977	1·4336	69·735	89	2783	485	17·4160	5·741
44	67150	932	1·3874	72·098	90	2298	460	20·0101	4·998
45	66218	854	1·2899	77·519	91	1838	426	23·2007	4·310
46	65364	746	1·1412	87·642	92	1412	373	26·4114	3·786
47	64618	737	1·1411	87 642	93	1039	308	29·6421	3·374
48	63881	824	1·2897	77·519	94	731	240	32·8930	3·040
49	63057	1001	1·5870	63·012	95	491	178	36·1639	2·765
50	62056	1262	2·0329	49·188	96	313	124	39·4548	2·535
51	60794	1597	2·6275	38·052	97	189	85	45·1416	2·215
52	59197	1837	3·1024	32·237	98	104	55	52·9088	1·890
53	57360	1983	3·4576	28·918	99	49	30	61·3067	1·631
54	55377	2045	3·6931	27·078	100	19	19	75·0000	1·333
55	53332	2031	3·8089	26·254					

Table I, No. 4.

Rural, Town and City Districts.—Bakers.—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	396	·3961	252·462	56	55501	1538	2·7705	36·088
11	99604	395	·3961	252·462	57	53963	1555	2·8822	34·698
12	99209	401	·4038	247·647	58	52408	1560	2·9758	33·602
13	98808	415	·4193	238·493	59	50848	1552	3·0512	32·776
14	98393	435	·4425	225·989	60	49296	1532	3·1085	32·165
15	97958	464	·4735	211·193	61	47764	1503	3·1476	31·766
16	97494	499	·5123	195·198	62	46261	1513	3·2709	30·572
17	96995	521	·5368	186·289	63	44748	1557	3·4783	28·752
18	96474	528	·5472	182·749	64	43191	1628	3·7699	26·525
19	95946	521	·5435	183·993	65	41563	1723	4·1456	24·120
20	95425	501	·5255	190·295	66	39840	1835	4·6055	21·711
21	94924	468	·4934	202·675	67	38005	1923	5·0601	19·763
22	94456	461	·4877	205·044	68	36082	1988	5·5094	18·152
23	93995	478	·5084	196·696	69	34094	2030	5·9534	16·798
24	93517	519	·5555	180·018	70	32064	2050	6·3921	15·645
25	92998	585	·6290	158·983	71	30014	2049	6·8254	14·652
26	92413	674	·7289	137·193	72	27965	2041	7·2987	13·701
27	91739	743	·8103	123·411	73	25924	2025	7·8119	12·801
28	90996	793	·8733	114·508	74	23899	1999	8·3651	11·955
29	90203	828	·9177	108·968	75	21900	1962	8·9581	11·163
30	89375	843	·9437	105·966	76	19938	1912	9·5911	10·426
31	88532	842	·9512	105·130	77	18026	1868	10·3620	9·653
32	87690	815	·9297	107·562	78	16158	1821	11·2708	8·873
33	86875	764	·8791	113·753	79	14337	1766	12·3175	8·117
34	86111	689	·7996	125·063	80	12571	1697	13·5021	7·407
35	85422	590	·6911	144·697	81	10874	1652	14·8247	6·748
36	84832	470	·5535	180·669	82	9282	1508	16·2430	6·158
37	84362	405	·4804	208·160	83	7774	1381	17·7573	5·631
38	83957	396	·4714	212·134	84	6393	1238	19·3673	5·163
39	83561	441	·5272	189·681	85	5155	1086	21·0732	4·746
40	83120	538	·6471	154·536	86	4069	931	22·8750	4·370
41	82582	687	·8314	120·279	87	3138	778	24·8032	4·032
42	81895	903	1·1026	90·662	88	2360	634	26·8580	3·723
43	80992	1183	1·4607	68·446	89	1726	501	29·0393	3·444
44	79809	1518	1·9058	52·466	90	1225	384	31·3471	3·190
45	78291	1909	2·4377	41·017	91	841	284	33·7814	2·960
46	76382	2335	3·0566	32·712	92	557	201	36·0243	2·776
47	74047	2573	3·4752	28·777	93	356	136	38·0758	2·626
48	71474	2640	3·6934	27·078	94	220	87	39·9359	2·504
49	68834	2555	3·7114	26·947	95	133	55	41·6047	2·404
50	66279	2339	3·5290	28·337	96	78	33	43·0820	2·321
51	63940	2012	3·1463	31·786	97	45	21	47·3179	2·113
52	61928	1775	2·8661	34·892	98	24	12	53·9970	1·852
53	60153	1617	2·6884	37·202	99	12	8	61·3067	1·631
54	58536	1530	2·6133	38·270	100	4	4	75·0000	1·333
55	57006	1505	2·6406	37·864					

Table I, No. 5.

Rural, Town and City Districts.—Miners.—*Males.*

Ages.	Living.	Dying.	Mortality. per Cent.	Specific. Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	396	·3961	252·462	56	63960	2177	3·4036	29·377
11	99604	395	·3961	252·462	57	61783	2371	3·8368	26·062
12	99209	401	·4038	247·647	58	59412	2558	4·3057	23·223
13	98808	414	·4193	238·493	59	56854	2735	4·8104	20·790
14	98394	435	·4425	225·989	60	54119	2896	5·3509	18·688
15	97959	464	·4735	211·193	61	51223	3036	5·9271	16·872
16	97495	499	·5123	195·198	62	48187	3064	6·3575	15·728
17	96996	540	·5567	179·630	63	45123	2997	6·6422	15·056
18	96456	585	·6070	164·745	64	42126	2857	6·7810	14·747
19	95871	636	·6630	150·830	65	39269	2660	6·7740	14·762
20	95235	690	·7247	137·988	66	36609	2424	6·6213	15·103
21	94545	749	·7922	126·231	67	34185	2241	6·5541	15·258
22	93796	772	·8228	121·536	68	31944	2100	6·5726	15·214
23	93024	759	·8164	122·489	69	29844	1993	6·6767	14·977
24	92265	713	·7731	129·349	70	27851	1912	6·8664	14·564
25	91552	634	·6929	144·321	71	25939	1853	7·1417	14·002
26	90918	524	·5758	173·671	72	24086	1804	7·4885	13·353
27	90394	450	·4976	200·965	73	22282	1762	7·9069	12·647
28	89944	412	·4582	218·245	74	20520	1723	8·3967	11·909
29	89532	410	·4577	218·484	75	18897	1693	8·9582	11·163
30	89122	442	·4960	201·613	76	17204	1650	9·5911	10·426
31	88680	508	·5732	174·459	77	15554	1612	10·3620	9·653
32	88172	552	·6262	159·693	78	13942	1571	11·2708	8·873
33	87620	574	·6549	152·695	79	12371	1524	12·3175	8·117
34	87046	574	·6594	151·653	80	10847	1465	13·5021	7·407
35	86472	553	·6397	156·323	81	9382	1391	14·8247	6·748
36	85919	512	·5957	167·870	82	7991	1298	16·2430	6·158
37	85407	496	·5813	172·028	83	6693	1189	17·7573	5·631
38	84911	506	·5963	167·701	84	5504	1066	19·3673	5·163
39	84405	541	·6408	156·055	85	4438	935	21·0732	4·746
40	83864	599	·7147	139·919	86	3503	801	22·8750	4·371
41	83265	679	·8181	122·234	87	2702	670	24·8032	4·032
42	82586	769	·9308	107·435	88	2032	546	26·8580	3·723
43	81817	861	1·0527	94·967	89	1486	432	29·0393	3·444
44	80956	959	1·1840	84·459	90	1054	330	31·3471	3·190
45	79997	1060	1·3246	75·472	91	724	245	33·7814	2·960
46	78937	1164	1·4744	67·843	92	479	173	36·0243	2·776
47	77773	1254	1·6118	62·035	93	306	117	38·0758	2·626
48	76519	1329	1·7367	57·571	94	189	75	39·9359	2·504
49	75190	1390	1·8491	54·083	95	114	47	41·6047	2·404
50	73800	1438	1·9490	51·308	96	67	29	43·0820	2·321
51	72362	1474	2·0364	49·116	97	38	18	47·3179	2·113
52	70888	1549	2·1858	45·746	98	20	11	53·9970	1·852
53	69339	1588	2·3973	41·719	99	9	6	61·3067	1·631
54	67751	1809	2·6707	37·439	100	3	3	75·0000	1·333
55	65942	1982	3·0061	33·267					

Table I, No. 6.

Residue, by abstracting Labourers from Rural Districts.—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	230	·2300	434·783	56	65081	1233	1·8948	52·770
11	99770	229	·2300	434·783	57	63848	1276	1·9987	50·025
12	99541	275	·2764	361·795	58	62572	1328	2·1231	47·103
13	99266	367	·3693	270·783	59	61244	1389	2·2681	44·092
14	98899	503	·5085	196.657	60	59855	1456	2·4336	41·085
15	98396	683	·6943	144·030	61	58399	1529	2·6197	38·168
16	97713	905	·9264	107·945	62	56870	1609	2·8309	35·323
17	96808	1051	1·0886	91·827	63	55261	1695	3·0672	32·605
18	95757	1124	1·1747	85·106	64	53566	1783	3·3286	30·039
19	94633	1126	1·1908	83·963	65	51783	1876	3·6151	27·662
20	93507	1061	1·1349	88·106	66	49907	1959	3·9267	25·465
21	92446	932	1·0070	99·305	67	47948	2039	4·2541	23·507
22	91514	830	·9065	110·314	68	45909	2110	4·5972	21·753
23	90684	756	·8335	119·976	69	43799	2170	4·9562	20·178
24	89928	709	·7880	126·904	70	41629	2219	5·3310	18·758
25	89219	687	·7699	129·887	71	39410	2254	5·7215	17·476
26	88532	690	·7793	128·320	72	37156	2269	6·1079	16·372
27	87842	690	·7852	127·356	73	34887	2264	6·4900	15·408
28	87152	687	·7877	126·952	74	32623	2240	6·8680	14·560
29	86465	680	·7867	127·113	75	30383	2200	7·2417	13·808
30	85785	671	·7823	127·828	76	28183	2145	7·6112	13·139
31	85114	659	·7744	129·132	77	26038	2090	8·0283	12·456
32	84455	651	·7713	129.651	78	23948	2033	8·4929	11·774
33	83804	648	·7731	129.349	79	21915	1973	9·0051	11·105
34	83156	648	·7797	128.255	80	19942	1907	9·5649	10·455
35	82508	653	·7912	126.390	81	18035	1830	10·1723	9·833
36	81855	661	.8075	123.839	82	16205	1729	10.6987	9·346
37	81194	666	.8208	121.832	83	14476	1600	11.0564	9·042
38	80528	669	.8312	120.308	84	12876	1445	11·2253	8·905
39	79859	670	.8387	119.232	85	11431	1290	11·2924	8·857
40	79189	668	.8432	118.596	86	10141	1153	11·3768	8·787
41	78521	663	.8447	118.385	87	8988	1049	11·6788	8·562
42	77858	669	.8589	116·428	88	7939	982	12·3700	8·084
43	77189	684	.8858	112·892	89	6957	948	13·6294	7·337
44	76505	708	.9252	108·085	90	6009	928	15·4410	6·477
45	75797	741	·9773	102·323	91	5081	903	17·7744	5·627
46	75056	782	1·0421	95·969	92	4178	864	20·6794	4·836
47	74274	827	1·1128	89·847	93	3314	805	24·2828	4·119
48	73447	874	1·1895	84·034	94	2509	719	28·6464	3·490
49	72573	923	1·2723	78·616	95	1790	609	34·0210	2·939
50	71650	975	1·3610	73·475	96	1181	483	40·8812	2·446
51	70675	1029	1·4565	68·634	97	698	339	48·5636	2·059
52	69646	1078	1·5481	64·599	98	359	212	58·9984	1·695
53	68568	1123	1·6383	61·050	99	147	97	66·0370	1·514
54	67445	1164	1·7261	57·937	100	50	50	85·0000	1·176
55	66281	1200	1·8116	55·188					

The Population in TABLE F was shewn to be bisected at ages 68-9, while among the Labourers that will be seen to take place at ages 71-2. The sum of the series of differences of the points of equal specific intensity between the Rural, Town, and City Districts respectively, and Table C, were shewn to be 55, 23, and 5; but the sum of the same order of differences for Table I is 78; so that the difference between Labourers and the General Results for the Rural Districts is more than equivalent to the mean difference between Towns and Cities and the Rural Districts. It will also be seen that the sum of the series of differences of the points of equal specific intensity in the Rural Districts generally, and the Labourers, is 46, being above the mean of 55 and 23.

The difference for the equation of life to

Age 10, between Rural and Town Districts, is 4 years.
" " Town and City " 3 "
and " Labourers and Rural " 3 "

So that, in this general way of viewing the question, employment produces as wide a distinction as locality.

If TABLE J is now referred to, it will be seen that the Expectation of Life among Labourers in the Rural Districts exceeds the Expectation of the Rural Districts generally throughout the whole term of life. At decennial ages the following is the relative value of life.

Age.	Rural Districts.		Difference in Favour of Labourers.		Age.
	General Results. G.	Labourers. J.	In Years.	Per Cent.	
20	45·3550	47·9063	2·5513	5·6251	20
30	38·4073	40·5972	2·1899	5·7017	30
40	30·9724	32·7693	1·7969	5·8016	40
50	23·4700	25·0745	1·6045	6·8500	50
60	16·6524	17·8205	1·1681	7·8146	60
70	10·9124	11·3498	0·4374	4·0072	70

The preceding arrangements, however, do not shew the full influence of employment on health, or rather that of an individual employment on health; for, in making comparisons of classes with any standard, that standard ought not to include the class held in comparison, but be the residue left by abstracting that class from the general results; otherwise the effect of that class, in changing the integral expression, will not be seen to its full extent, and the concealment of the real difference will be the greater in proportion to the

Table J.

Expectation of Life.

Ages.	No. 1. Labourers. Rural Districts.	No. 2. Clerks. Rural Districts, Towns & Cities.	No. 3. Plumbers, Painters, &c. Rural Districts, Towns & Cities.	Ages.	No. 1. Labourers. Rural Districts.	No. 2. Clerks. Rural Districts, Towns & Cities.	No. 3. Plumbers, Painters, &c. Rural Districts, Towns & Cities.
10	56·0054	39·9856	43·0665	56	20·6469	13·1183	13·9984
11	55·1333	39·1425	42·2160	57	19·8919	12·8824	13·5324
12	54·2590	38·2964	41·3626	58	19·2307	12·7101	13·0637
13	53·3907	37·4498	40·5345	59	18·5262	12·5691	12·6043
14	52·5348	36·6053	39·7593	60	17·8205	12·4264	12·1675
15	51·6982	35·7656	39·0622	61	17·1110	12·2477	11·7694
16	50·8876	34·9334	38·4688	62	16·3955	11·9981	11·4225
17	50·1089	34·1106	38·0039	63	15·6837	11·6894	11·1204
18	49·3563	33·3113	37·6195	64	14·9839	11·3327	10·8590
19	48·6241	32·5485	37·2682	65	14·3041	10·9401	10·6327
20	47·9063	31·8347	36·9040	66	13·6508	10·5228	10·4344
21	47·1974	31·1816	36·4805	67	13·0293	10·0913	10·2591
22	46·4923	30·6005	35·9530	68	12·4392	9·6513	10·0944
23	45·7866	30·0841	35·3447	69	11·8796	9·2082	9·9268
24	45·0768	29·6257	34·6785	70	11·3498	8·7668	9·7429
25	44·3595	29·2186	33·9757	71	10·8489	8·3252	9·5287
26	43·6308	28·8570	33·2580	72	10·3763	7·8984	9·2704
27	42·8876	28·5353	32·5447	73	9·9239	7·4811	8·9762
28	42·1326	28·2300	31·8436	74	9·4844	7·0728	8·6547
29	41·3682	27·9180	31·1625	75	9·0505	6·6729	8·3143
30	40·5972	27·5761	30·5082	76	8·6152	6·3805	7·9630
31	39·8221	27·1815	29·8874	77	8·1720	5·8940	7·6107
32	39·0449	26·7122	29·3066	78	7·7372	5·5175	7·2572
33	38·2658	26·1825	28·7474	79	7·3254	5·1552	6·9268
34	37·4848	25·6065	28·1916	80	6·9510	4·8090	6·5043
35	36·7014	24·9977	27·6222	81	6·6274	4·4816	6·1823
36	35·9159	24·3689	27·0224	82	6·3690	4·1749	5·8817
37	35·1278	23·7326	26·3772	83	6·1485	3·8872	5·5915
38	34·3394	23·0968	25·7004	84	5·9381	3·6182	5·3005
39	33·5527	22·4692	25·0052	85	5·7094	3·3677	4·9977
40	32·7693	21·8573	24·3046	86	5·4321	2·1327	4·6702
41	31·9909	21·2677	23·6096	87	5·0775	2·9133	4·3045
42	31·2136	20·7065	22·9313	88	4·6692	2·7099	3·9243
43	30·4465	20·1611	22·2563	89	4·2364	2·5225	3·5482
44	29·6814	19·6190	21·5728	90	3·8025	2·3490	3·1915
45	28·9164	19·0684	20·8694	91	3·3766	2·1939	2·8651
46	28·1496	18·4982	20·1808	92	2·9789	2·0570	2·5786
47	27·3793	17·8986	19·3622	93	2·6054	1·9356	2·3248
48	26·6083	17·2822	18·5799	94	2·2510	1·8200	2·0937
49	25·8392	16·6612	17·8161	95	1·9194	1·7000	1.8727
50	25·0745	16·0465	17·0955	96	1·6133	1·5455	1·6534
51	24·3158	15·4482	16·4400	97	1·3291	1·3400	1·4101
52	23·5657	14·8755	15·8700	98	1·0652	1·1153	1·1538
53	22·8241	14·3426	15·3622	99	·8390	·8333	·8878
54	22·0904	13·8631	14·8944	100	·5000	·5000	·5000
55	21·3650	13·4205	14·4464				

TABLE J, *continued.*

EXPECTATION OF LIFE.

Ages.	No. 4. Bakers. Rural Districts, Townsand Cities.	No. 5. Miners. Rural Districts, Towns & Cities.	No. 6. Rural Districts after Abstracting Labourers.	Ages.	No. 4. Bakers. Rural Districts, Towns & Cities.	No. 5. Miners. Rural Districts, Towns & Cities.	No. 6. Rural Districts after Abstracting Labourers.
10	47·9816	48·5160	50·7552	56	16·2677	13·7412	18·6229
11	47·1704	4 77069	49·8711	57	15·7171	13·2077	17·9726
12	46·3562	46·8949	48·9847	58	15·1686	12·7149	17·3289
13	45·5423	46·0832	48·1190	59	14·6187	12·2644	16·6938
14	44·7323	45·2750	47·2957	60	14·0632	11·8590	16·0696
15	43·9287	44·4738	46·5349	61	13·4982	11·5012	15·4578
16	43·1353	43·6831	45·8567	62	12·9205	11·1943	14·8599
17	42·3547	42·9052	45·2802	63	12·3405	10·9205	14·2781
18	41·5807	42·1417	44·7722	64	11·7673	10·6619	13·7141
19	40·8068	41·3967	44·2980	65	11·2086	10·4012	13·1690
20	40·0268	40·6700	43·8255	66	10·6718	10·1208	12·6453
21	39·2355	39·9630	43·3227	67	10·1629	9·8028	12·1415
22	38·4274	39·2781	42·7588	68	9·6779	9·4554	11·6585
23	37·6134	38·5999	42·1456	69	9·2130	9·0855	11.1961
24	36·8031	37·9134	41·4957	70	8·7647	8·7000	10·7536
25	36·0057	37·2047	40·8215	71	8·3292	8·3043	10·3310
26	35·2305	36·4607	40·1341	72	7·9028	7·9048	9·9274
27	34·4857	35·6692	39·4457	73	7·4856	7·5043	9·5405
28	33·8398	34·8451	38·7541	74	7·0775	7·1057	9·1679
29	33·0556	34·0032	38·0580	75	6·6637	6·6730	8·8070
30	32·3572	33·1573	37·3557	76	6·2872	6·2805	8·4554
31	31·6605	32·3201	36·6463	77	5·8995	5·8937	8·1108
32	30·9597	31·5034	35·9283	78	5·5238	5·5174	7·7750
33	30·2455	30·6987	35·2035	79	5·1618	5·1545	7·4499
34	29·5094	29·8978	34·4739	80	4·8168	4·8085	7 1374
35	28·7434	29·0930	33·7408	81	4·4904	4·4815	6·8539
36	27·9398	28·2770	33·0059	82	4·1749	4·1743	6·5552
37	27·0927	27·4435	32·2706	83	3·8877	3·8868	6·2784
38	26·2210	26·6009	31·5333	84	3·6195	3·6185	5·9964
39	25·3429	25·7574	30·7933	85	3·3687	3·3675	5·6913
40	24·4756	24·9204	30·0496	86	3·1343	3·1329	5·3516
41	23·6309	24·0960	29·3010	87	2·9159	2·9134	4·9740
42	22·8249	23·2900	28·5463	88	2·7123	2·7092	4·5651
43	22·0738	22·5042	27·7893	89	2·5249	2·5209	4·1389
44	21·3936	21·7382	27·0333	90	2·3531	2·3492	3·7130
45	20·7992	20·9930	26·2812	91	2·1991	2·1920	3·2998
46	20·3060	20·2680	25·5357	92	2·0655	2·0574	2·8994
47	19·9306	19·5639	24·7993	93	1·9494	1·9379	2·5320
48	19·6301	18·8763	24·0729	94	1·8455	1·8280	2·1839
49	19·3638	18·2011	23·3568	95	1·7256	1·7018	1·8603
50	19·0910	17·5346	22·6512	96	1·5897	1·5448	1·5618
51	18·7710	16·8730	21·9568	97	1·3888	1·3421	1·2965
52	18·3646	16·2135	21·2738	98	1·1666	1·1000	1·0487
53	17·8918	15·5645	20·6004	99	·8333	·8333	·8401
54	17·3722	14·9176	19·9351	100	·5000	·5000	·5000
55	16·8251	14·3131	19·2764				

high ratio which the numbers of the class compared bear to the total numbers. For example:—

Let a = 20 per cent. and represent the total results or general average; and
„ b = 25 } per cent. and represent classes composing the general average A;
„ c = 15 }

then, if either class b or class c were compared with the total result or general average, the apparent difference would be only 5 per cent.; while the actual difference between it and the residue class is 10 per cent. Hence, if any class of results be compared with the general results in which that is also included, the apparent difference will always be less than the actual difference, whether the effect of that class be to increase or decrease the ratio of the general results.

The facts forming Table I No. 1 have therefore been eliminated from the general results for the Rural Districts in Table E, and the residue formed into another Life Table, from which Table I No. 6 has been deduced; and it will be found that the specific intensity for the Rural Districts generally is as high

at Age	20	in Table F Rural Districts	as at Age	16	for the Residue.
	30	„ „		16	„
	40	„ „		35	„
	50	„ „		48	„
	60	„ „		58	„
	70	„ „		69	„

The corresponding points of equal specific intensity for the Residue at

Age	20	in Table I No. 6 is as high as Age	52 for Labourers in Table I, No. 1;
	30	„ „	44
	40	„ „	48
	50	„ „	55
	60	„ „	65
	70	„ „	72

Half the population dies off at Age 65–66 in the Residue, at Age 68–9 in the General Average, and at Age 71–2 in the Labourers.

The great distinction between the value of life among the labouring population in the Rural Districts, and the rest of the Rural Districts, is therefore obvious; and conclusively shews, that even in the same locality, in the Rural Districts of the country, where all the supposed contaminating influences of ill-ventilated houses, narrow streets, bad sewerage, poisoned air, epidemic town fevers, and factory restraints, are absent, there is nevertheless a very great superiority in the value of life in one class over another. In the

Rural Districts recited in the early part of this Paper, very little difference can be supposed to exist between the means of support and the various habits of life of the members of Friendly Societies. In fact, they may be presumed to assimilate as near to each other's condition as any means of classification can suggest, the only difference between the individual members being difference of employment or occupation; and therefore, in classifying the various trades, pure elements may be said to be brought into comparison, the only distinction being difference of occupation.

It has already been stated that any thing like a complete inquiry into the influence of employment on health is not contemplated in this Paper. A few illustrations only will be brought forward to aid the other branch of the inquiry, and by which it will be seen that, independently of locality, difference of employment has a marked effect on the duration of life.

If this position can be fairly established, it will follow as a direct consequence, that wherever an excess of unhealthy trades are congregated, there must also be an increased rate of mortality independent of the local influence; for if the same trades were placed in any other district, there would still be an increased rate of mortality simply in virtue of the trade or occupation.

At Ages 30–35, the general mortality of the Town Districts exceeds that of the Rural by 14.981 per cent. of the whole mortality at that period of life; but if the class designated Labourers were abstracted from the Rural Districts, the mortality of the residue would be increased 6.181 per cent. of the original ratio. But suppose a still further change to take place, and that the class named Labourers is not only abstracted from the Rural Districts, but added to the Town Districts; this arrangement would affect the respective mortalities to such an extent, that instead of the mortality of the Town Districts exceeding that of the Rural Districts by 14.981 per cent., it would fall short of it by 1.831 per cent. of the whole mortality at that period of life. In like manner also would other periods of life be affected. It is evident, therefore, that the Residue of the population in the Rural Districts has a factitious value assigned to it, from being mixed up with the class called Labourers; and that in any attempt to discover the relative values of life in different localities, unless employment were made an element in the comparison, an undue value would be attached to a great portion of life in the Rural Districts. The nature of the Rural Districts is such, that a great proportion of the upgrown population must consist of Agricultural and other Labourers. In the facts here collected, they amount to 33 per cent.; and their lives being of higher value than the average lives in the district, it is no more fair to judge of the value of life and the influence of locality on the residue of the population from calculations involving the consideration of all the lives generally, than it would be just to compare the value of life in the Residue in the preceding illustration with Town

life, and draw the conclusion that life in the Rural Districts was of less value than in the Town Districts; for in both cases a factitious value is assigned, by being mixed up with a favourable class.

From the preceding remarks it is evident that in particular occupations, even in the Rural Districts, life is of less value than in others. Those occupations cannot be said to be less healthy from the objectionable features peculiar to large Towns and Cities, for they must be supposed under very favourable circumstances for prolonged life. In Table H, No. 4, is given the expectation of life in sixteen trades in the Rural Districts, selected at random, without any previous knowledge as to whether they were healthy or otherwise. An inspection of this Table will shew, that in those sixteen trades, (namely, Plumbers Painters and Glaziers, Weavers, Butchers, Millwrights, Stonemasons, Cabinetmakers, Printers, Bakers, Bricklayers, Wheelwrights, Tailors, Cordwainers and Shoemakers, Sawyers, Clerks, Carpenters and Joiners, and Blacksmiths,) the value of life is less than the average for the whole Rural Districts; and Labourers were before shewn to be more healthy than the average results. It is therefore clear, that if a given District were chiefly made up of the class whose lives are above the average value, or of those below it, that the general results for that District would be of high or low value accordingly.

A very small portion of the population in either the Town or City Districts can follow agricultural pursuits; and therefore the standard of life in those Districts will be lowered in consequence of that circumstance alone; but on further examination it will be found that the comparative value of life in those districts is not only lowered in consequence of the absence of many of the most healthy occupations common to the Rural Districts, but that it is still further decreased by the presence of some of the most unhealthy employments, not to be found, or at least to a very limited extent, in the Rural Districts. In other words, the effect of the occupations is such, that if the same people were placed in the Rural Districts, no matter over how much surface they were spread, in order to avoid the influence supposed to connect itself with the congregation of large numbers into towns, still the mortality would be much higher among the people thus conditioned, than among the average of the rural population in ordinary circumstances.

If the view brought forward be correct, that the mortality of Towns and Cities is increased from the existence of a high proportion of trades which are in themselves unhealthy, independent of the influence of the locality, it should follow that the difference found by a comparison of the rate of mortality of a given number of trades in one district, with that of the same trades in another district, should be less than the difference between the rates of mortality for the general results of the same districts. If the differences of the decennial periods from 10 to 70 in the general results for Rural and Town Districts be taken, the sum of the differences will be found to amount to 19.3299 years; but the sum of the differences at the corresponding periods for the 16 Trades formerly referred to is

only 16.3868 years; being less than the other by about 15 per cent. For a like reason it should follow, that if the differences at the same periods between the 16 Trades and the general results of each district be taken, they should amount to less in the Town than in the Rural Districts; and accordingly in the Rural Districts the sum of the differences is found to be 4.7029 years, while in the Town Districts it is only 1.7598 years.

In order to afford still further evidence of the effect on the average value of life by the prevalence of particular trades, a few other cases will be submitted; and to render the illustrations more simple, they will be given for the average of the Three Districts, or rather with the Three Districts conjoined; and consequently they must be brought into comparison with the General Results for the Three Districts as given in Tables F and C.

An inspection of Table I will shew that the equation of life in Miners is at Ages 61–2; in Bakers, at Ages 59–60; Plumbers Painters and Glaziers, at 56–7; and Clerks, at so early a period of life as 51–2. In F, for the Three Districts combined, the same result appeared at Ages 66–7, shewing a difference of 5, 7, 10, and 15 years respectively; and the following Abridgement of Table J will shew the marked difference in the expectation of life in these employments at five decennial periods.

Ages.	Rural, Town, & City Districts. G.	Clerks. J, No. 2.	Plumbers, Painters, and Glaziers. J, No. 3.	Bakers. J, No. 4.	Miners. J, No. 5.
20	43·7736	31·8347	36·9040	40·0268	40·6700
30	36·6051	27·5761	30·5082	32·3572	33·1573
40	29·3306	21·8573	24·3046	24·4756	24·9204
50	22·1920	16·0465	17·0955	19·0910	17·5346
60	15·6942	12·4264	12·1675	14·0632	11·8590

The very remarkable difference between the above employments and the General Results, cannot fail to occasion some surprise; and at the same time conclusively prove, that any district containing a majority of the above, or other equally unhealthy employments, must shew a very reduced average value of life for the district, independent of the influence of the local situation itself on health.

It will no doubt cause some uneasiness in the minds of inquirers to find, that so highly important and industrious a class of men as Clerks should stand lowest in the scale of the above employments; and that from 20 to 60 their expectation of life should be only 75 per cent. of the general average. The expectation of life among Plumbers Painters and Glaziers in the same period is equal to 81 per cent., Miners 85 per cent., and Bakers 88 per cent. of the general average.

Plumbers Painters and Glaziers will be found next in the scale; and although much

below the general average, they are still of considerably higher value than the class designated Clerks.

Bakers, as well as the preceding class, have long been supposed to be unhealthy: and although no attempt had hitherto been made to ascertain the precise value of their lives, it is thought that the present results will shew a much greater difference than would be generally calculated upon. The class Miners will be found to rank above the three others at the early periods of life, but below them at the latter periods of life.

The remark formerly made should be here kept clearly in view, that the difference found by a comparison of any class with the general results will always be less than the actual difference; and therefore the effect which the preceding and other unhealthy employments have in reducing the average rate of mortality, is still greater than what appears by the preceding Table.

Some large towns or cities are known to represent a less value of life to their inhabitants generally than other towns; and the explanation usually given of this difference has been the favourable or unfavourable nature of the locality, and a change in the sanitary regulations of the place looked forward to as a certain remedy; but a minute examination of all the external circumstances affecting life will shew, that the great diversity in the mortality of certain classes arises from the influence of other agents. In Table H, No. 2, is given the expectation of life calculated from the combined data of all trades in Liverpool; and a comparison of this with the general results for the Rural Districts will shew a much greater difference due to locality in the apparent sense, than has hitherto been shown by any other tables of the value of life in different localities; but at the same time it will be seen that this difference falls much short of the actual difference between different employments. At Age 30 the difference between the expectation of life in the Rural Districts and in Liverpool is 8.2636 years; but the difference between Clerks and Labourers is 13.0211 years; and so also at other periods of life. It ought to be understood, that in making this comparison, the influence of employment is shewn to disadvantage; for, as has been already pointed out, every large town has its average lowered by the influence of certain trades; and therefore the actual difference in the above comparison between the Rural Districts and Liverpool is less than there given: and again, in the comparison between Clerks and Labourers, the expectation for Clerks has been for the average of the three districts; but if it had been taken for the City Districts only, a much greater difference would have been found; and consequently the influence of employments appeared the greater.

From Table K, No. 2, it will appear that there is a uniform decrease in the specific intensity of life from the commencement to the end of the table. A comparison will shew that the specific intensities at ages 30, 40, and 50, correspond with the specific intensities at ages

[45, 54,

Table K, No. 1.

Rural, Town and City Districts.—Trades not Classified.—*Females.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	1389	1·3888	71·994	56	62073	1061	1·7094	58·514
11	98611	1370	1·3888	71·994	57	61012	1039	1·7021	58·754
12	97241	1334	1·3715	72·886	58	59973	1020	1·7002	58·824
13	95907	1282	1·3368	74·794	59	58953	1004	1·7037	58·685
14	94625	1216	1·2848	77·821	60	57949	992	1·7126	58·377
15	93409	1135	1·2155	82·237	61	56957	984	1·7269	57·904
16	92274	1042	1·1288	88·574	62	55973	1024	1·8294	54·675
17	91232	951	1·0429	95·877	63	54949	1110	2·0202	49·505
18	90281	865	·9579	104·395	64	53839	1238	2·2991	43·497
19	89416	781	·8736	114·469	65	52601	1403	2·6663	37·509
20	88635	700	·7902	126·550	66	51198	1598	3·1216	32·031
21	87935	622	·7076	141·323	67	49600	1792	3·6120	27·685
22	87313	569	·6521	153·351	68	47808	1978	4·1375	24·166
23	86744	541	·6237	160·334	69	45830	2153	4·6980	21·286
24	86203	537	·6224	160·668	70	43677	2312	5·2936	18·889
25	85666	555	·6482	154·273	71	41365	2451	5·9242	16·880
26	85111	597	·7010	142·653	72	38914	2491	6·4013	15·623
27	84514	621	·7349	136·073	73	36423	2449	6·7247	14·870
28	83893	629	·7499	133·351	74	33974	2342	6·8945	14·503
29	83264	621	·7462	134·012	75	31632	2186	6·9106	14·470
30	82643	598	·7237	138·179	76	29446	1995	6·7731	14·765
31	82045	560	·6825	146·520	77	27451	1870	6·8123	14·680
32	81485	539	·6618	151·103	78	25581	1797	7·0282	14·229
33	80946	535	·6615	151·172	79	23784	1765	7·4207	13·475
34	80411	548	·6816	146·714	80	22019	1759	7·9899	12·516
35	79863	577	·7221	138·485	81	20260	1770	8·7357	11·447
36	79286	621	·7830	127·714	82	18490	1751	9·4684	10·562
37	78665	658	·8367	119·517	83	16739	1705	10·1880	9·814
38	78007	689	·8833	113·212	84	15034	1637	10·8946	9·183
39	77318	713	·9227	108·378	85	13397	1553	11·5880	8·628
40	76605	732	·9550	104·712	86	11844	1453	12·2683	8·150
41	75873	744	·9800	102·041	87	10391	1335	12·8507	7·782
42	75129	758	1·0085	99·108	88	9056	1316	14·5351	6·878
43	74371	774	1·0402	96·154	89	7740	1294	16·7216	5·981
44	73597	791	1·0754	93·023	90	6446	1251	19·4102	5·152
45	72806	811	1·1139	89·767	91	5195	1174	22·6008	4·425
46	71995	832	1·1557	86·505	92	4021	1069	26·5925	3·759
47	71163	861	1·2095	82·645	93	2952	881	29·8333	3·352
48	70302	897	1·2753	78·431	94	2071	684	33·0399	3·027
49	69405	939	1·3531	73·910	95	1387	504	36·3589	2·750
50	68466	988	1·4428	69·300	96	883	350	39·6498	2·522
51	67478	1042	1·5444	64·767	97	533	241	45·1555	2·214
52	66436	1078	1·6232	61·614	98	292	155	52·9127	1·890
53	65358	1097	1·6791	59·559	99	137	84	61·3067	1·631
54	64261	1100	1·7121	58·411	100	53	53	75·0000	1·333
55	63161	1088	1·7222	58·072					

Table K, No. 2.

Trades not Classified.—Liverpool.—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	396	·3961	252·462	56	53834	1751	3·2529	30·741
11	99604	395	·3961	252·462	57	52083	1741	3·3422	29·922
12	99209	401	·4038	247·647	58	50342	1810	3·5961	27·809
13	98808	414	·4193	238·493	59	48532	1949	4·0148	24·907
14	98394	435	·4425	225·989	60	46583	2142	4·5981	21·749
15	97959	464	·4735	211·193	61	44441	2376	5·3461	18·706
16	97495	499	·5123	195·198	62	42065	2501	5·9445	16·821
17	96996	522	·5379	185·908	63	39564	2529	6·3933	15·642
18	96474	531	·5506	181·620	64	37035	2479	6·6925	14·943
19	95943	528	·5501	181·785	65	34556	2364	6·8421	14·616
20	95415	512	·5367	186·324	66	32192	2203	6·8421	14·616
21	94903	484	·5101	196·040	67	29989	2062	6·8761	14·543
22	94419	478	·5061	197·589	68	27927	1939	6·9441	14·401
23	93941	493	·5247	190·585	69	25988	1831	7·0461	14·192
24	93448	529	·5657	176·772	70	24157	1735	7·1821	13·924
25	92919	585	·6294	158·881	71	22422	1649	7·3522	13·602
26	92334	661	·7155	139·762	72	20773	1582	7·6148	13·132
27	91673	722	·7872	127·033	73	19191	1530	7·9700	12·547
28	90951	768	·8443	118·441	74	17661	1487	8·4178	11·879
29	90183	800	·8870	112·740	75	16174	1449	8·9582	11·632
30	89383	818	·9151	109·278	76	14725	1412	9·5911	10·426
31	88565	823	·9288	107·666	77	13313	1380	10·3620	9·653
32	87742	840	·9576	104·428	78	11933	1345	11·2708	8·873
33	86902	871	1·0017	99·800	79	10588	1304	12·3175	8·117
34	86031	913	1·0611	94·251	80	9284	1254	13·5021	7·407
35	85118	967	1·1356	88·028	81	8030	1190	14·8247	6·748
36	84151	1031	1·2254	81·633	82	6840	1111	16·2427	6·158
37	83120	1090	1·3108	76·278	83	5729	1017	17·7563	5·631
38	82030	1142	1·3918	71·839	84	4712	913	19·3654	5·163
39	80888	1188	1·4685	68·074	85	3799	800	21·0700	4·746
40	79700	1228	1·5407	64·893	86	2999	686	22·8702	4·373
41	78472	1262	1·6086	62·150	87	2313	574	24·7975	4·032
42	77210	1302	1·6863	59·312	88	1739	467	26·8519	3·724
43	75908	1346	1·7737	56·370	89	1272	378	29·0335	3·445
44	74562	1395	1·8709	53·447	90	894	280	31·3423	3·191
45	73167	1447	1·9778	50·556	91	614	207	33·7782	2·960
46	71720	1502	2·0945	47·733	92	407	147	36·0224	2·776
47	70218	1569	2·2339	44·763	93	260	99	38·0748	2·627
48	68649	1645	2·3960	41·736	94	161	64	39·9356	2·504
49	67004	1729	2·5808	38·745	95	97	40	41·6047	2·404
50	65275	1820	2·7883	35·868	96	57	25	43·0820	2·321
51	63455	1915	3·0185	33·124	97	32	15	47·3179	2·113
52	61540	1962	3·1876	31·368	98	17	9	53·9970	1·852
53	59578	1964	3·2956	30·340	99	8	5	61·3067	1·631
54	57614	1926	3·3425	29·913	100	3	3	75·0000	1·333
55	55688	1854	3·3282	30·048					

45, 54, and 63 in the Rural Districts; Ages 38, 49, and 57 in the Towns; Ages 29, 42, and 59 in the Cities; and at Ages 39, 51, and 61 in the Three Districts combined. A further inspection of the same table will shew that half the population dies off between the ages 58-9,—an earlier period than in the City Districts of Table F by 3 years.

In Table H, No. 2, the expectation of life for all trades in Liverpool will be found to be lower than the expectation given in Table G for the City Districts generally. The following shews the difference at decennial periods of Life.

Ages.	City Districts. Table G.	Liverpool.	Difference.
20	40·0148	37·9553	2·0595
30	32·8603	30·1437	2·7166
40	26·0873	23·1524	2·9349
50	19·9271	17·0946	2·8325
60	13·7685	11·9626	1·8059

So far as a general inspection of the above results would suffice, it might be inferred that Liverpool is less healthy than the average of the large cities in England; but it is necessary here again to keep in view the peculiar aggregation of employments which are in themselves unhealthy, independent of the locality; for it so happens, that the class of Labourers in large cities is subject to a very high rate of mortality, and that the peculiar business of Liverpool occasions a great preponderance of that class in the dock, and other employments of that kind, a large proportion of which enters into the above results.

It has been shewn in Table F, for the Three Districts, that the expectation of life for Members of Friendly Societies over the country generally, is higher than that for the whole population of England and Wales as given in Table D. In like manner it will also be found, that the expectation of life among the members of Friendly Societies in Liverpool is also higher than the expectation for the general population of Liverpool.

At page XXVII. of the 5th Report of the Registrar General will be found a table of the Expectation of Life for the Town of Liverpool; and assuming that it gives a correct representation of the value of life of the whole population, we shall find the comparative value of life between the Members of Friendly Societies and the general population in the following Table:—

Age.	Expectation of Life in Liverpool.		Difference in Favour of Friendly Societies in Liverpool.	
	Friendly Societies.	Whole Population.	In Years.	Per Cent.
20	37·9553	33·0000	4·9553	15·0160
25	33·9067	30·0000	3·9067	13·0223
30	30·1437	27·0000	3·1437	11·6433
35	26·5260	23·0000	3·5260	15·3303
40	23·1524	21·0000	2·1524	10·2500
45	19·9908	18·0000	1·9908	11·0600
50	17·0946	16·0000	1·0946	5·6922

A careful consideration of all the preceding observations, it is believed, will be sufficient to shew that the excessive mortality of the general population of Liverpool must be due to some other cause than simply that of locality. The persons over whom the observations in the first column extend, being members of Friendly Societies, and almost exclusively workmen and mechanics, of necessity inhabit the inferior class of houses, in the worst conditioned streets ; and it is therefore impossible that they can escape the contagious effect of the pestilential diseases supposed to be the scourge of unhealthy neighbourhoods : and admitting this, the results given for the Friendly Societies must evidence all the legitimate effects due to locality ; and therefore the excessive mortality of the general population is due to some other cause—such as the poverty and distress which, unhappily, are allowed to remain so much neglected in the large manufacturing and commercial towns of the kingdom. If any part of this argument were to be met by the statement, that the higher expectation of life given for the members of Friendly Societies in Liverpool than for the general community, may be accounted for by the omission of some very unhealthy trades ; this would be sufficiently answered by the fact, that 175 employments are included, and, as has been already shewn, some of them the most unhealthy occupations ; so that a fair average may be said to be taken. A similar objection might also seem to apply against the general results for the whole kingdom ; but if it is recollected that upwards of four hundred trades are included, the force of the objection will disappear.

It is evident from all that has been said, that the peculiar sanitary condition of large towns has not the remarkable effect which many have supposed in shortening the duration of life ; still, it has some effect, and the nature and extent of that influence it is important to understand. But a rude estimate only can be made, until the value of life in every important employment, occupation, or trade has been investigated, for the various localities or districts, on some such plan as that given in the present paper ; and then grouping or classifying a given number of these common to different localities : the result arrived at would shew the precise amount of influence which a particular District, City, or Town, has on the duration of life. A partial or limited comparison of a few trades would not be adequate to answer definitely this question, but an accurate combination of a sufficiently large number of trades, to guard against the effect of fluctuation.

In the beginning of this Paper it was stated, that to carry out the question in this extended degree, was a task of too imposing a nature on the present occasion ; and that such illustrations would only be brought forward, as would be necessary to solve the more immediate question.

On the general mortality of large towns especially, little confidence should be placed, even although every other precaution as to distinction of age and other conditions be taken ; for fallacies from two sources are apt to enter :—First, if, in comparisons of large towns,

precisely the same classes of trades do not exist, errors will arise from that circumstance;—and in the second place, although the same classes of trades do exist in both places, unless the proportionate numbers to the whole population be the same, errors in the result must arise. The nature of the error in the first case is plain, from the fact that different trades are in the same place influenced by different rates of mortality; and if any given trade is wanting, its tendency to alter the general average will be lost. The error in the second case is of a like nature; for if the absence of the whole class affect the general result, the absence of a fraction of that class must also affect it, although not to the same extent. Illustrations confirmatory of this have already been given when discussing the influence of the class of Labourers, and also the Sixteen Trades combined, on the general averages for the respective Districts; and a recurrence to those illustrations will be sufficient to shew the truth of the present observations.

An inspection of TABLE K, No. 1, will shew the Rate of Mortality for Female Life among the Members of Friendly Societies in England and Wales, for the Rural, Town, and City Districts combined. The Tables for Male and Female Life here given, seem to possess in many respects the same relation as those given for Male and Female Life generally in England and Wales; the Specific Intensity at the earlier periods being higher for Male than Female Life, crossing each other at the middle periods, and turning in favour of Female Life at the advanced ages. It will be seen that the Male Population of Table F for the Three Districts is bisected at 66-7, and that the Female Population in Table K, No. 1, is also bisected at the same period of life. In the general population of the country the same thing takes place a year later among Females than among Males.

The Expectation for Female Life, for the general results of Friendly Societies, will be found in Table H, No. 1; and the following Abstract will shew the relative value of Male and Female Life in the country generally, as well as in Friendly Societies:—

Age.	Expectation of Life in England and Wales.			Expectation of Life among the Members of Friendly Societies.		
	Males.	Females.	Difference.	Males.	Females.	Difference.
20	40·6910	41·5982	·9072	43·7736	45·2640	1·4904
30	34·0990	35·1671	1·0681	36·6051	38·1841	1·5790
40	27·4760	28·7330	1·2570	29·3306	30·7813	1·4507
50	20·8463	22·0545	1·2082	22·1920	23·8200	1·6280
60	14·5854	15·5230	·9396	15·6942	17·2380	1·5438
70	9·2176	9·8409	·9376	10·2057	10·9750	·7693

It will thus be seen, that the distinction between Male and Female Life among the Members of Friendly Societies, differs very little from that between the sexes in the country generally; and this difference would be considerably reduced if the necessary corrections for employments were made, as the data for Male Life in Friendly Societies

will be composed of a much higher proportion of unhealthy trades, in relation to the whole male population of the country, than the data for Female Life in comparison to the whole female population. This coincidence of course tends to strengthen the confidence to be reposed in both classes of results, and brings forward an additional argument against the sufficiency of certain inquiries hitherto made, shewing in some instances so wide a distinction between the value of life in the sexes.

DURATION OF LIFE IN SCOTLAND.

A SEPARATE set of returns was procured from Societies in Scotland, and the facts embodied in them have been combined into a distinct class of tables, to which reference will be presently made. The results thus derived will be of the more importance, as serving to confirm those obtained from the English Societies; and their value in this respect is enhanced by the fact, that the Scotch returns extend over a period of twelve years, while those by the English Societies were limited to five years. The Scotch returns were also made under quite different circumstances from those of the English, and they thus act as checks on each other. The nature and extent of the original form in which the information was furnished by the returns from Scotland, have already been referred to.

TABLE L represents the results for the Scotch Societies, in precisely the same manner that Table E did for the English Societies. The places forming the respective Districts in Scotland will be found in the Appendix, Note III.

TABLES M and N were subsequently formed from Table L, in the same manner in which Tables C and D were formed from B, and Tables F and G from E. An inspection of TABLE M for the Rural Districts, will shew that the Specific Intensity increases in a uniform ratio, from the earliest age in the Table to the extreme of life. A comparison with the Rural Districts of England (Table F) will shew a higher Specific Intensity in the Rural Districts of Scotland till age 34; but from that till age 54 it is lower in Scotland, and from 54 to the end of the Tables the Specific Intensity is sometimes higher and sometimes lower. A more general and comprehensive view of the two Tables will be obtained by comparing the Equation of Life: for age 10 it takes place between the ages 67-8 in the Rural Districts in Scotland, but between ages 68-9 in England. Again the Equation for age 30 takes place in both Tables between 70 and 71. Considering the different sources from which the data of the two Tables are derived, and the different periods of years over which the observations extend, the agreement of the Tables in this respect is somewhat remarkable.

[In the Town of

Table L.

Trades not Classified.—Scotland.—Rural Districts.

Age.	Population.		DEATHS.			SICKNESS.			Age.
				In Periods.			In Periods.		
	At Each Age.	In Periods.	At Each Age	Total.	Per Cent.	At Each Age.	Total.	Per Annum.	
10	...	...	...	...	...	... ...	... ...	... ...	10
11	2		...			... ...			11
12	5		...			... ...			12
13	6	33	...	...	...	... ...	... ...	... ...	13
14	8		...			... ...			14
15	12		...			... ...			15
16	37		...			7·714			16
17	83		1			48·428			17
18	162	906	1	6	0·6623	128·714	802·713	0·8860	18
19	264		1			261·143			19
20	360		3			356·714			20
21	488		1			496·286			21
22	610		5			496·571			22
23	717	3573	4	24	0·6717	521·428	3070·570	0·8594	23
24	804		7			690·714			24
25	954		7			865·571			25
26	1067		4			964·286			26
27	1161		10			983·000			27
28	1220	6058	10	41	0·6768	817·000	4645·000	0·7667	28
29	1290		6			862·286			29
30	1320		11			1018·428			30
31	1364		11			911·857			31
32	1372		8			827·857			32
33	1357	6770	12	45	0·6647	1037·000	4881·428	0·7210	33
34	1336		5			941·714			34
35	1341		9			1163·000			35
36	1372		14			1180·428			36
37	1360		17			1253·714			37
38	1341	6774	3	58	0·8562	998·571	5806·855	0·8572	38
39	1362		15			1172·714			39
40	1339		9			1201·428			40
41	1335		14			1412·571			41
42	1277		10			1112·714			42
43	1227	6211	10	53	0·8533	1212·286	6580·428	1·0595	43
44	1191		11			1435·571			44
45	1181		8			1407·286			45
46	1172		7			1519·571			46
47	1144		20			1653·714			47
48	1128	5623	12	65	1·1559	1495·857	7538·713	1·3407	48
49	1105		11			1414·714			49
50	1074		15			1454·857			50

TABLE L, *continued.*

TRADES NOT CLASSIFIED. SCOTLAND. RURAL DISTRICTS.

Ages.	Population.		DEATHS.			SICKNESS.			Age.
				In Periods.			In Periods.		
	At Each Age.	In Periods.	At Each Age	Total.	Per Cent.	At Each Age.	Total.	Per Annum.	
51	1015		12			2014·714			51
52	979		13			2212·286			52
53	914	4630	14	61	1·3175	1830·857	10481·999	2·2639	53
54	888		10			2227·428			54
55	834		12			2196·714			55
56	791		16			2189·571			56
57	720		11			2181·000			57
58	709	3543	16	72	2·0322	1918·714	10844·285	3·0608	58
59	681		10			2220·286			59
60	642		19			2334·714			60
61	600		11			2125·000			61
62	552		13			2628·286			62
63	497	2497	23	84	3·3640	2197·428	12585·143	5·0401	63
64	446		18			2788·286			64
65	402		19			2846·143			65
66	347		11			3091·428			66
67	308		11			3245·286			67
68	282	1418	9	56	3 9490	2786·714	15388·713	10·8525	68
69	260		10			3017·857			69
70	221		15			3247·428			70
71	199		13			2679·286			71
72	164		12			2559·286			72
73	143	759	8	45	5·9289	2680·000	13450·000	17·7207	73
74	126		2			2585·571			74
75	127		10			2945·857			75
76	105		6			2560·428			76
77	98		7			2531·000			77
78	81	432	5	26	6·0185	2255·714	11611·999	26·8796	78
79	78		5			2180·857			79
80	70		3			2084·000			80
81	59		5			1837·714			81
82	51		11			1547·000			82
83	36	187	6	30	16·0248	1035·143	5463·714	29·2123	83
84	25		6			643·286			84
85	16		2			400·571			85
86	14		3			423·428			86
87	9		2			294·428			87
88	7	37	1	8	21·6216	236·571	1190·713	32·1814	88
89	4		1			143·143			89
90	3		1			93·143			90
91	1		1			2·000			91
92	...		...			... ...			92
93	...	1	...	1	100·0000	... ...	2·000	2·0000	93
94	...		...			... ...			94
95	1		...			... ...			95
		49452		675	1·3705		114344·273	2·3216	

Table L, *continued.*

Trades not Classified.—Scotland.—Towns.

Age.	Population.		DEATHS.			SICKNESS.			Age.
	At Each Age.	In Periods.	At Each Age	In Periods. Total.	In Periods. Per Cent.	At Each Age.	In Periods. Total.	In Periods. Per Annum.	
10	7	7	...	...	...	...	...	...	10
11	15		...			2·428			11
12	19		...			12·000			12
13	17	99	...	...	...	10·286	29·000	0·2929	13
14	21		...			...			14
15	27		...			4·288			15
16	38		1			24·143			16
17	57		...			28·714			17
18	86	436	...	3	0·6881	91·857	345·856	0·7930	18
19	120		1			100·428			19
20	135		1			100·714			20
21	176		2			157·286			21
22	206		3			271·571			22
23	243	1154	1	7	0·6066	245·714	1153·999	0·9999	23
24	253		1			187·428			24
25	276		...			292·000			25
26	303		1			336·286			26
27	314		...			387·286			27
28	334	1629	2	8	0·4911	421·286	1745·572	1·0716	28
29	243		4			339·000			29
30	335		1			261·714			30
31	306		3			312·571			31
32	338		...			272·428			32
33	333	1551	3	12	0·7737	276·000	1401·284	0·9035	33
34	324		4			351·714			34
35	250		2			288·571			35
36	289		4			219·714			36
37	268		2			242·000			37
38	253	1230	3	13	1·0569	303·857	1275·285	1·0368	38
39	222		2			266·000			39
40	198		2			243·714			40
41	179		3			169·143			41
42	160		1			174·000			42
43	150	744	...	6	0·8064	161·000	747·714	1·0050	43
44	130		1			146·571			44
45	125		1			97·000			45
46	120		5			163·571			46
47	99		...			189·714			47
48	93	471	3	10	2·1231	201·000	837·285	1·7777	48
49	85		1			151·000			49
50	74		1			132·000			50

TABLE L, *continued.*

TRADES NOT CLASSIFIED. SCOTLAND. TOWNS.

Age.	Population.		DEATHS.			SICKNESS.			Age.
				In Periods.			In Periods.		
	At Each Age.	In Periods.	At Each Age	Total.	Per Cent.	At Each Age.	Total.	Per Annum.	
51	75		...			74·000			51
52	69		...			117·000			52
53	63	319	...	2	0·6270	101·000	533·000	1·6708	53
54	57		1			125·000			54
55	55		1			116·000			55
56	44		2			78·000			56
57	41		...			39·000			57
58	42	199	1	4	2·0101	28·000	227·000	1·1407	58
59	39		...			50·000			59
60	33		1			32·000			60
61	31		...			32·000			61
62	28		...			22·000			62
63	24	126	...	4	3·1746	53·428	259·428	2·0589	63
64	24		4			57·000			64
65	19		...			95·000			65
66	16		3			127·000			66
67	16		1			89·000			67
68	13	64	2	7	10.9375	59·000	461·000	7·2031	68
69	12		1			124·000			69
70	7		...			62·000			70
71	8		...			73·000			71
72	7		...			35·000			72
73	8	36	...	1	2·7777	140·000	474·000	13·1666	73
74	7		1			114·000			74
75	6		...			112.000			75
76	7		1			104·286			76
77	7		...			71·000			77
78	7	25	2	4	16·0000	109·000	353·286	14·1314	78
79	2		1			17·000			79
80	3		...			52·000			80
81	2		...			52·000			81
82	2		...			52·000			82
83	2	11	...	1	9·0000	... ...	142·000	12·9090	83
84	3		...			... ...			84
85	2		1			38·000			85
86	1		...			52·000			86
87	1		...			25·000			87
88	1	5	...	...	... ...	52·000	233·000	46·6000	88
89	1		...			52·000			89
90	1		...			52·000			90
91	1		...			... ...			91
92	1		...			... ...			92
93	...	2	...	...	... ...	... ...	... ...	... ...	93
94	...		...			... ...			94
95	...		...			... ...			95
		8108		82	1·0113		10218·709	1·2603	

Table L, *continued.*

Trades not Classified. Scotland. Cities.

Age.	Population.		DEATHS.			SICKNESS.			Age.
	At Each Age.	In Periods.	At Each Age	In Periods. Total.	In Periods. Per Cent.	At Each Age.	In Periods. Total.	In Periods. Per Annum.	
10	...	...	...	...	... ...	... ...	... ...	... ...	10
11	...		...			... ...			11
12	...		...			... ...			12
13	...	...	...	...	... ...	... ...	... ...	... ...	13
14	...		...			... ...			14
15	...		...			... ...			15
16	...		...			... ...			16
17	1		...			... ...			17
18	1	21	...	...	... ...	... ...	... ...	... ...	18
19	2		...			... ...			19
20	17		...			... ...			20
21	39		...			23·286			21
22	76		1			47·714			22
23	128	645	4	10	1·5504	166·143	495·285	0·7679	23
24	174		...			117·714			24
25	228		5			140·428			25
26	288		3			177·714			26
27	343		2			262·714			27
28	387	1888	4	22	1·1653	366·286	1749·571	0·9267	28
29	424		8			515·857			29
30	446		5			427·000			30
31	476		6			430·571			31
32	494		7			456·714			32
33	515	2491	7	37	1·4853	592·143	2572·285	1·0326	33
34	500		9			621·286			34
35	506		8			471·571			35
36	505		7			515·571			36
37	506		9			444·857			37
38	461	2304	7	41	1·7795	402·857	2333·427	1·0128	38
39	432		10			502·571			39
40	400		8			467·571			40
41	383		8			477·857			41
42	353		8			545·143			42
43	320	1612	5	32	1·9852	297·714	1853·571	1·1499	43
44	291		10			318·714			44
45	265		1			214·143			45
46	262		5			415·286			46
47	256		6			455·857			47
48	246	1227	9	37	3·0155	508·857	2682·857	2·1865	48
49	232		9			571·000			49
50	231		8			731·857			50

TABLE L, *continued.*

TRADES NOT CLASSIFIED.—SCOTLAND.—CITIES.

Age.	Population.		DEATHS.			SICKNESS.			Age.
				In Periods.			In Periods.		
	At Each Age.	In Periods.	At Each Age	Total.	Per Cent.	At Each Age.	Total.	Per Annum.	
51	223		5			746·286			51
52	224		8			768·714			52
53	211	1065	8	37	3·4742	671·571	3244·713	3·0467	53
54	211		12			570·571			54
55	196		4			487·571			55
56	193		12			713·714			56
57	179		8			716·286			57
58	167	829	5	38	4 5838	597·143	3247·571	3·9175	58
59	153		6			608·714			59
60	137		7			611·714			60
61	120		5			658·857			61
62	103		7			720·714			62
63	93	462	5	21	4·5455	588·428	3065·141	6·8510	63
64	75		...			531·714			64
65	71		4			565·428			65
66	62		5			427·571			66
67	52		1			485·000			67
68	44	234	1	11	4·7009	577·857	2361·142	10·0904	68
69	41		2			503·714			69
70	35		2			367·000			70
71	30		1			526·286			71
72	29		...			698·286			72
73	26	130	2	12	9·2308	654·000	3128·572	24·0659	73
74	25		4			695·000			74
75	20		5			555·000			75
76	15		1			486·000			76
77	10		1			300·000			77
78	9	49	...	4	8·1632	316·000	1717·714	35·0554	78
79	8		1			320·000			79
80	7		1			295·714			80
81	6		1			311·000			81
82	4		...			208·000			82
83	4	16	2	3	18·7500	168·000	791·000	49·4375	83
84	1		...			52·000			84
85	1		...			52·000			85
86	1		...			52·000			86
87	1		...			52·000			87
88	...	3	...	0	0·0000	... ...	156·000	52·0000	88
89	...		...			... ...			89
90	1		...			52·000			90
91	1		...			52·000			91
92	1		...			52·000			92
93	1	5	...	0	0·0000	52·000	260·000	52·0000	93
94	1		...			52·000			94
95	1		...			52·000			95
96	1		1			41·000			96
97	...		...			...			97
98	...	1	...	1	100·0000	...	41·000	41·0000	98
99	...		...			...			99
100	...		...			...			100
		12982		306	2·3571		29699·849	2·2878	

Table L, *continued.*

Trades not Classified.—Scotland.—Rural, Town, and City Districts.

Age.	Population.		DEATHS.			SICKNESS.			Age.
				In Periods.			In Periods.		
	At Each Age.	In Periods.	At EachAge	Total.	Per Cent.	At Each Age.	Total.	Per Annum.	
10	7	7	...	...	...	... ...	... ...	... ...	10
11	17		...			2·428			11
12	24		...			12·000			12
13	23	132	...	...	...	10·286	29·000	0·2197	13
14	29		...			... ...			14
15	39		...			4·286			15
16	75		1			31·857			16
17	141		1			77·143			17
18	249	1363	1	9	0·6603	220·571	1148·570	0·8427	18
19	386		2			361·571			19
20	512		4			457·428			20
21	703		3			676·857			21
22	892		9			815·857			22
23	1088	5372	9	41	0·7633	933·286	4719·857	0·8786	23
24	1231		8			995·857			24
25	1458		12			1298·000			25
26	1658		8			1478·286			26
27	1818		12			1633·000			27
28	1941	9575	16	71	0·7415	1604·571	8140·143	0·8501	28
29	2057		18			1717·143			29
30	2101		17			1707·143			30
31	2146		20			1655·000			31
32	2204		15			1557·000			32
33	2205	10812	22	94	0·8694	1905·143	8855·000	0·8190	33
34	2160		18			1814·714			34
35	2097		19			1923·143			35
36	2166		25			1915·714			36
37	2134		28			1940·571			37
38	2055	10308	13	112	1·0865	1705·286	9415·571	0·9134	38
39	2016		27			1941·286			39
40	1937		19			1912·714			40
41	1897		25			2059·571			41
42	1790		19			1831·857			42
43	1697	8567	15	91	1·0622	1671·000	9181·713	1·0717	43
44	1612		22			1900·857			44
45	1571		10			1718·428			45
46	1554		17			2098·428			46
47	1499		26			2299·286			47
48	1467	7321	24	112	1·5298	2205·714	11058·856	1·5106	48
49	1422		21			2136·714			49
50	1379		24			2318·714			50
51	1313		17			2835·000			51
52	1272		21			3098·000			52
53	1188	6014	22	100	1·6628	2603·428	14259·714	2·3711	53
54	1156		23			2923·000			54
55	1085		17			2800·286			55

TABLE L, *continued.*

TRADES NOT CLASSIFIED.—SCOTLAND.—RURAL, TOWN, AND CITY DISTRICTS.

Ages.	Population.		DEATHS.			SICKNESS.			Age.
	At Each Age.	In Periods.	At Each Age	In Periods. Total.	In Periods. Per Cent.	At Each Age.	In Periods. Total.	In Periods. Per Annum.	
56	1028		30			2981·286			56
57	940		19			2936·286			57
58	918	4571	22	114	2·4940	2543·857	14318·857	3·1325	58
59	873		16			2879·000			59
60	812		27			2978·428			60
61	751		16			2815·857			61
62	683		20			3371·000			62
63	614	3085	28	109	3·5332	2839·286	15909·714	5·1571	63
64	545		22			3377·000			64
65	492		23			3506·571			65
66	425		19			3646·000			66
67	376		13			3819·286			67
68	339	1716	12	74	4·3124	3423·571	18210·856	10·6123	68
69	313		13			3645·571			69
70	263		17			3676·428			70
71	237		14			3278·571			71
72	200		12			3292·571			72
73	177	925	10	58	6·2703	3474·000	17052·570	18·4352	73
74	158		7			3394·571			74
75	153		15			3612·857			75
76	127		8			3150·714			76
77	115		8			2902·000			77
78	97	506	7	34	6·7194	2680·714	13682·999	27·0415	78
79	88		7			2517·857			79
80	79		4			2431·714			80
81	67		6			2200·714			81
82	57		11			1807·000			82
83	42	214	8	34	15·8879	1202·143	6395·714	29·8865	83
84	29		6			695·286			84
85	19		3			490·571			85
86	16		3			527·428			86
87	11		2			371·428			87
88	8	45	1	8	17·7777	288·571	1579·713	35·1047	88
89	5		1			195·143			89
90	5		1			197·143			90
91	3		1			54·000			91
92	2		...			52·000			92
93	1	8	...	1	12·5000	52·000	262·000	32·7500	93
94	1		...			52·000			94
95	1		...			52·000			95
96	1		1			41·000			96
97	...		...			... ...			97
98	...	1	...	1	100·0000	... ...	41·000	41·0000	98
99	...		...			... ...			99
100	...		...			... ...			100
		70542		1063	1·5069		154261·989	2·1868	

In the Town Districts of Scotland, half the population dies off at the ages of 65–6; but in the Town Districts in England, the same thing takes place a year earlier. It is in the City Districts of Scotland that the most marked difference is found; but when it is recollected that the only places included in the list of Scotch Cities are Edinburgh, Glasgow, Paisley, and Aberdeen, and that the observations relate chiefly to the three first-named places, it will in some measure account for the very high rate of Mortality. An inspection of the City Districts of TABLE M will shew a much lower specific intensity for Scotland up to age 60, than even for Liverpool; but from that age to 80 it is higher than in Liverpool. In the City Districts for Scotland, half the population dies off between the ages of 53–4, being eight years earlier than in the City Districts of England, and five years sooner than in Liverpool, and in fact coming very close on the very worst class of results in England—namely, Clerks—in which half the population was cut off at ages 51–2. But as the numbers over which the observations extend in the City Districts in Scotland are limited, less confidence might reasonably be placed in the results, and the excessive mortality in part assigned to the fluctuation to which small numbers are subject.

On examination, however, of the various groups of results making up the whole class for the City Districts, they were, without exception, found subject to a high rate of mortality, carrying thus evidence of an absolute higher mortality than in the average of English Cities.

The results for the Three Districts combined shew a less specific intensity than in England up to age 66; and from that age upwards, the Tables cross each other. In the general results for Scotland, half of the population dies off between ages 64–65; but in the general results for England, that event is prolonged two years beyond that period.

Looking next to the Expectation of Life, as given in TABLE N, it will be found that in the Rural Districts of Scotland it is less than in England by about half-a-year, from ages 20 to 75; but the Town Districts of Scotland give a higher Expectation than in England till beyond 70 years of age, and the City Districts of Scotland shew a lower Expectation of Life than Liverpool up till about 50 years of age. In order to admit of better comparison, the general results for the Three Districts in Scotland and England will be arranged as follows for decennial ages.

Age.	Expectation of Life in Friendly Societies in		Difference in Favour of England in Years.
	Scotland.	England.	
20	42·7218	43·7736	1·0518
30	35·6512	36·6051	0·9539
40	28·6765	29·3306	0·6741
50	21·8122	22·1920	0·3798
60	15·0184	15·6942	0·6758
70	10·4296	10·2057	—0·2239

[From a consideration

Table M.

Rural Districts—Scotland.

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	230	·2300	434·783	56	69492	1214	1·7463	57·274
11	99770	229	·2300	434·783	57	68278	1307	1·9139	52·247
12	99541	246	·2473	404·367	58	66971	1411	2·1062	47·483
13	99295	280	·2818	354·862	59	65560	1523	2·3232	43·048
14	99015	330	·3337	299·670	60	64037	1643	2·5649	38·986
15	98685	398	·4029	248·201	61	62394	1767	2·8312	35·323
16	98287	481	·4893	204·374	62	60627	1860	3·0677	32·594
17	97806	547	·5589	178·923	63	58767	1924	3·2744	30·544
18	97259	595	·6115	163·532	64	56843	1962	3·4511	28·977
19	96664	626	·6472	154·512	65	54881	1975	3·5980	27·793
20	96038	640	·6660	150·150	66	52906	1966	3·7150	26·918
21	95398	637	·6679	149·723	67	50940	1980	3·8878	25·720
22	94761	635	·6696	149·343	68	48960	2015	4·1164	24·295
23	94126	632	·6712	148·987	69	46945	2066	4·4007	22·722
24	93494	629	·6724	148·721	70	44879	2132	4·7509	21·048
25	92865	626	·6736	148·456	71	42747	2196	5·1369	19·467
26	92239	622	·6747	148·214	72	40551	2213	5·4573	18·325
27	91617	618	·6750	148·148	73	38338	2186	5·7020	17·538
28	90999	614	·6747	148·214	74	36152	2123	5·8712	17·033
29	90385	609	·6736	148·456	75	34029	2030	5·9647	16·764
30	89776	603	·6719	148·832	76	31999	1914	5·9826	16·714
31	89173	597	·6695	149·365	77	30085	1925	6·3979	15·630
32	88576	598	·6752	148·104	78	28160	2031	7·2106	13·868
33	87978	606	·6891	145·117	79	26129	2200	8·4207	11·875
34	87372	621	·7111	140·627	80	23929	2400	10·0282	9·970
35	86751	643	·7413	134·898	81	21529	2591	12·0330	8·313
36	86108	671	·7796	128·271	82	18938	2625	13·8601	7·215
37	85437	692	·8101	123·442	83	16313	2530	15·5093	6·447
38	84745	706	·8329	120·062	84	13783	2341	16·9807	5·889
39	84039	712	·8478	117·952	85	11442	2091	18·2743	5·473
40	83327	712	·8550	116·959	86	9351	1813	19·3900	5·157
41	82615	706	·8544	117·041	87	7538	1533	20·3326	4·919
42	81909	709	·8655	115·540	88	6005	1267	21·1019	4·739
43	81200	722	·8887	112·524	89	4738	1028	21·6980	4·608
44	80478	744	·9242	108·202	90	3710	821	22·1209	4·521
45	79734	775	·9719	102·891	91	2889	646	22·3706	4·470
46	78959	815	1·0324	96·899	92	2243	535	23·8316	4·196
47	78144	850	1·0879	91·912	93	1708	453	26·5040	3·774
48	77294	879	1·1377	87·873	94	1255	381	30·3877	3·291
49	76415	903	1·1819	84·602	95	874	310	35·4808	2·818
50	75512	922	1·2205	81·900	96	564	236	41·7892	2·393
51	74590	934	1·2528	79·808	97	328	161	49·1613	2·034
52	73656	963	1·3073	76·511	98	167	98	59·0648	1·693
53	72693	1006	1·3838	72·254	99	69	45	66·0370	1·514
54	71687	1063	1·4825	67·431	100	24	24	85·0000	1·176
55	70624	1132	1·6033	62·383					

TABLE M, *continued.*

TOWNS—SCOTLAND.

Ages.	Living.	Dying.	Mortality. per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	275	·2750	363·636	56	67829	988	1·4568	68·634
11	99725	274	·2750	363·636	57	66841	1153	1·7247	57·971
12	99451	290	·2915	343·053	58	65688	1303	1·9838	50·403
13	99161	322	·3246	308·072	59	64385	1439	2·2342	44·763
14	98839	370	·3741	267·308	60	62946	1559	2·4759	40·388
15	98469	433	·4402	227·170	61	61387	1663	2·7088	36·914
16	98036	513	·5228	191·278	62	59724	1915	3·2056	31·192
17	97523	571	·5857	170·736	63	57809	2293	3·9664	25·214
18	96952	610	·6287	159·058	64	55516	2771	4·9911	20·036
19	96342	628	·6520	153·374	65	52745	3312	6·2797	15·924
20	95714	627	·6555	152·555	66	49433	3872	7·8323	12·768
21	95087	608	·6392	156·446	67	45561	3986	8·7480	11·431
22	94479	587	·6215	160·901	68	41575	3753	9·0267	11·078
23	93892	566	·6025	165·975	69	37822	3279	8·6686	11·535
24	93326	543	·5821	171·792	70	34543	2651	7·6735	13·031
25	92783	520	·5604	178·444	71	31892	1927	6·0416	16·551
26	92263	496	·5373	186·116	72	29965	1578	5·2649	18·993
27	91767	486	·5301	188·644	73	28387	1517	5·3435	18·713
28	91281	492	·5389	185·563	74	26870	1687	6·2774	15·931
29	90789	512	·5635	177·462	75	25183	2031	8·0666	12·396
30	90277	545	·6041	165·536	76	23152	2480	10·7110	9·337
31	89732	593	·6606	151·378	77	20672	2623	12·6885	7·880
32	89139	639	·7172	139·431	78	18049	2526	13·9967	7·143
33	88500	685	·7737	129·249	79	15523	2272	14·6378	6·831
34	87815	729	·8303	120·438	80	13251	1936	14·6112	6·845
35	87086	772	·8869	112·752	81	11315	1575	13·9168	7·184
36	86314	814	·9436	105·977	82	9740	1333	13·6887	7·305
37	85500	837	·9789	102·156	83	8407	1171	13·9270	7·179
38	84663	841	·9928	100·725	84	7236	1059	14·6315	6·835
39	83822	826	·9854	101·482	85	6177	976	15·8024	6·329
40	82996	794	·9567	104·526	86	5201	907	17·4396	5·734
41	82202	745	·9066	110·302	87	4294	827	19·2608	5·192
42	81457	749	·9192	108·790	88	3467	737	21·2660	4·701
43	80708	803	·9944	100·563	89	2730	635	23·2552	4·299
44	79905	905	1·1324	88·339	90	2095	537	25·6284	3·902
45	79000	1053	1·3330	75·019	91	1558	438	28·1856	3·547
46	77947	1244	1·5964	62·657	92	1120	344	30·7328	3·254
47	76703	1340	1·7472	57·241	93	776	258	33·2701	3·006
48	75363	1346	1·7855	55·991	94	518	186	35·9973	2·778
49	74017	1268	1·7133	58·377	95	332	128	38·5147	2·597
50	72749	1107	1·5246	65·574	96	204	83	41·0220	2·438
51	71642	878	1·2254	81·633	97	121	55	46·0819	2·170
52	70764	737	1·0414	96·061	98	66	35	53·3790	1·873
53	70027	681	·9725	102·828	99	31	19	61·3067	1·631
54	69346	707	1·0188	98·135	100	12	12	75·0000	1·331
55	68639	810	1·1802	84·746					

TABLE M, *continued.*

CITIES.—SCOTLAND.

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	396	·3961	252·462	56	45206	1872	4·1399	24·155
11	99604	395	·3961	252·462	57	43334	1870	4·3159	23·170
12	99209	401	·4038	247·647	58	41464	1844	4·4460	22·492
13	98808	414	·4193	238·493	59	39620	1795	4·5302	22·075
14	98394	435	·4425	225·989	60	37825	1728	4·5684	21·891
15	97959	464	·4735	211·193	61	36097	1646	4·5608	21·925
16	97495	499	·5123	195·198	62	34451	1571	4·5608	21·925
17	96996	564	·5817	171·910	63	32880	1502	4·5687	21·887
18	96432	657	·6818	146·671	64	31378	1439	4·5843	21·815
19	95775	778	·8126	123·062	65	29939	1379	4·6076	21·701
20	94997	925	·9740	102·669	66	28560	1325	4·6387	21·556
21	94072	1097	1·1661	85·763	67	27235	1320	4·8448	20·640
22	92975	1213	1·3044	76·687	68	25915	1354	5·2258	19·135
23	91762	1275	1·3889	71·994	69	24561	1420	5·7818	17·295
24	90487	1285	1·4195	70·423	70	23141	1507	6·5128	15·354
25	89202	1246	1·3963	71·633	71	21634	1605	7·4188	13·479
26	87956	1160	1·3193	75·815	72	20029	1623	8·1009	12·344
27	86796	1103	1·2705	78·678	73	18406	1575	8·5591	11·684
28	85693	1071	1·2499	80·000	74	16831	1480	8·7933	11·373
29	84622	1064	1·2575	79·491	75	15351	1351	8·8037	11·358
30	83558	1081	1·2933	77·340	76	14000	1203	8·5902	11·641
31	82477	1119	1·3573	73·692	77	12797	1132	8·8429	11·308
32	81358	1156	1·4203	70·423	78	11665	1115	9·5617	10·458
33	80202	1189	1·4822	67·476	79	10550	1134	10·7467	9·302
34	79013	1219	1·5431	64·809	80	9416	1167	12·3979	8·065
35	77794	1247	1·6029	62·383	81	8249	1197	14·5152	6·887
36	76547	1272	1·6618	60·168	82	7052	1165	16·5179	6·053
37	75275	1293	1·7171	58·241	83	5887	1084	18·4060	5·432
38	73982	1309	1·7688	56·529	84	4803	969	20·1794	4·955
39	72673	1321	1·8170	55·036	85	3834	837	21·8382	4·579
40	71352	1328	1·8617	53·706	86	2997	701	23·3823	4·277
41	70024	1333	1·9029	52·549	87	2296	576	25·1048	3·984
42	68691	1358	1·9770	50·582	88	1720	465	27·0056	3·702
43	67333	1403	2·0841	47·985	89	1255	365	29·0849	3·439
44	65930	1466	2·2242	44·964	90	890	279	31·3425	3·191
45	64464	1545	2·3973	41·719	91	611	206	33·7784	2·960
46	62919	1638	2·6033	38·417	92	405	146	36·0226	2·776
47	61281	1708	2·7865	35·881	93	259	99	38·0750	2·626
48	59573	1756	2·9469	33·933	94	160	64	39·9357	2·504
49	57817	1783	3·0843	32·425	95	96	40	41·6047	2·404
50	56034	1793	3·1989	31·260	96	56	24	43.0820	2·321
51	54241	1785	3·2907	30·386	97	32	15	47·3179	2·113
52	52456	1788	3·4084	29·343	98	17	9	53·9970	1·852
53	50668	1800	3·5523	28·145	99	8	5	61·3067	1·631
54	48868	1819	3·7221	26·867	100	3	3	75·0000	1·333
55	47049	1843	3·9180	25·523					

TABLE M, *continued.*

RURAL, TOWN AND CITY DISTRICTS.—SCOTLAND.

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	250	·2499	400·160	56	64211	1388	2·1615	46·253
11	99750	249	·2499	400·160	57	62823	1468	2·3360	42·808
12	99501	265	·2663	375·516	58	61355	1546	2·5189	39·698
13	99236	297	·2991	334·336	59	59809	1621	2·7101	36·900
14	98939	345	·3484	287·026	60	58188	1693	2·9096	34·364
15	98594	408	·4140	241·546	61	56495	1761	3·1175	32·072
16	98186	487	·4961	201·572	62	54734	1814	3·3149	30·166
17	97699	553	·5659	176·710	63	52920	1853	3·5019	28·555
18	97146	606	·6234	160·411	64	51067	1879	3·6786	27·181
19	96540	645	·6686	149·566	65	49188	1891	3·8448	26·008
20	95895	673	·7015	142·552	66	47297	1892	4·0007	24·994
21	95222	688	·7221	138·485	67	45405	1909	4·2036	23·787
22	94534	697	·7377	135·557	68	43496	1937	4·4538	22·452
23	93837	702	·7483	133·636	69	41559	1975	4·7511	21·048
24	93135	702	·7539	132·644	70	39584	2017	5·0955	19·623
25	92433	697	·7545	132·538	71	37567	2061	5·4871	18·225
26	91736	688	·7502	133·298	72	35506	2066	5·8183	17·188
27	91048	685	·7518	133·014	73	33440	2036	6·0892	16·423
28	90363	686	·7594	131·683	74	31404	1978	6·2997	15·873
29	89677	693	·7730	129·366	75	29426	1898	6·4499	15·504
30	88984	705	·7926	126·167	76	27528	1800	6·5397	15·291
31	88279	722	·8182	122·220	77	25728	1795	6·9783	14·331
32	87557	742	·8474	118·008	78	23933	1859	7·7657	12·877
33	86815	764	·8801	113·624	79	22074	1965	8·9019	11·233
34	86051	789	·9164	109·123	80	20109	2089	10·3868	9·625
35	85262	815	·9562	104·581	81	18020	2202	12·2205	8·183
36	84447	844	·9996	100·040	82	15818	2177	13·7630	7·267
37	83603	864	1·0334	96·805	83	13641	2048	15·0144	6·662
38	82739	875	1·0575	94·518	84	11593	1852	15·9747	6·262
39	81864	878	1·0719	93·284	85	9741	1621	16·6438	6·010
40	80986	872	1·0767	92·851	86	8120	1382	17·0217	5·875
41	80114	859	1·0719	93·284	87	6738	1199	17·7963	5·618
42	79255	861	1.0867	91·996	88	5539	1051	18·9674	5·271
43	78394	879	1.1212	89·206	89	4488	922	20·5351	4·869
44	77515	911	1·1754	85·106	90	3566	802	22·4994	4·444
45	76604	957	1·2492	80·064	91	2764	687	24·8602	4·023
46	75647	1016	1·3427	74·460	92	2077	569	27·4071	3·648
47	74631	1062	1·4229	70·274	93	1508	455	30·1400	3·318
48	73569	1096	1·4896	67·114	94	1053	348	33·0589	3·025
49	72473	1118	1·5430	64·809	95	705	255	36·1639	2·765
50	71355	1130	1·5830	63·171	96	450	178	39·4548	2·535
51	70225	1130	1·6096	62·112	97	272	123	45·1416	2·215
52	69095	1150	1·6641	60·096	98	149	79	52.9088	1·890
53	67945	1187	1·7466	57·241	99	70	43	61.3067	1·631
54	66758	1240	1·8569	53·850	100	27	27	75·0000	1·333
55	65518	1307	1·9952	50·125					

Table N.

Expectation—Scotland.

Ages.	Rural Districts.	Town Districts.	City Districts.	Rural, Town & City Districts	Ages.	Rural Districts.	Town Districts.	City Districts.	Rural, Town. & City Districts
10	53·0510	50·7434	42·6373	50·8034	56	18·6111	16·0438	14·8280	17·8953
11	52·1722	49·8830	41·8048	49·9295	57	17·9331	15·2735	14·4469	17·2797
12	51·2911	49·0180	40·9694	49·0532	58	17·2733	14·5329	14·0759	16·6812
13	50·4169	48·1599	40·1335	48·1828	59	16·6343	13·8168	13·7077	16·0994
14	49·5580	47·3152	39·3002	47·3260	60	16·0180	13·1213	13·3345	15·5340
15	48·7221	46·4911	38·4725	46·4898	61	15·4267	12·4418	12·9490	14·9845
16	47·9173	45·6942	37·6533	45·6810	62	14·8617	11·7743	12·5437	14·4506
17	47·1508	44·9319	36·8444	44·9062	63	14·3163	11·1478	12·1192	13·9288
18	46·4129	44·1936	36·0570	44·1590	64	13·7839	10·5876	11·6753	13·4160
19	45·6955	43·4703	35·3008	43·4330	65	13·2588	10·1175	11·2125	12·9094
20	44·9901	42·7522	34·5860	42·7218	66	12·7351	9·7619	10·7297	12·4056
21	44·2886	42·0308	33·9211	42·0201	67	12·2073	9·5491	10·2274	11·9017
22	43·5830	41·2981	33·3154	41·3224	68	11·6808	9·4166	9·7229	11·4021
23	42·8736	40·5531	32·7492	40·6255	69	11·1607	9·3014	9·2314	10·9102
24	42·1600	39·7960	32·2036	39·9280	70	10·6514	9·1369	8·7671	10·4296
25	41·4422	39·0260	31·6603	39·2274	71	10·1578	8·8548	8·3430	9·9627
26	40·7201	38·2432	31·1018	38·5217	72	9·6808	8·3921	7·9715	9·5118
27	39·9931	37·4472	30·5107	37·8090	73	9·2107	7·8308	7·6303	9·0688
28	39·2613	36·6439	29·8970	37·0919	74	8·7374	7·2447	7·2975	8·6243
29	38·5247	35·8398	29·2690	36·3717	75	8·2513	6·6965	6·9529	8·1705
30	37·7826	35·0397	28·6354	35·6512	76	7·7431	6·2401	6·5756	7·6993
31	37·0347	34·2500	28·0042	34·9319	77	7·2039	5·9287	6·1467	7·2030
32	36·2809	33·4745	27·3824	34·2157	78	6·6622	5·7177	5·6947	6·7057
33	35·5241	32·7126	26·7700	33·5040	79	6·1411	5·5667	5·2437	6·2284
34	34·7671	31·9639	26·1653	32·7969	80	5·6598	5·4355	4·8150	5·7882
35	34·0125	31·2272	25·5674	32·0958	81	5·2350	5·2799	4·4254	5·4012
36	33·2626	30·5021	24·9755	31·4008	82	4·8828	5·0529	4·0917	5·0835
37	32·5199	29·7877	24·3893	30·7127	83	4·5880	4·7748	3·8025	4·8149
38	31·7814	29·0772	23·8069	30·0282	84	4·3384	4·4666	3·5479	4·5772
39	31·0442	28·3640	23·2267	29·3438	85	4·1237	4·1466	3·3182	4·3524
40	30·3052	27·6413	22·6474	28·6565	86	3·9341	3·8309	3·1053	4·1214
41	29·5621	26·9034	22·0675	27·9630	87	3·7600	3·5345	2·9007	3·8642
42	28·8126	26·1449	21·4860	27·2606	88	3·5923	3·2583	2·7047	3·5925
43	28·0598	25·3829	20·8624	26·5545	89	3·4192	3·0029	2·5215	3·3166
44	27·3070	24·6330	20·3436	25·8501	90	3·2280	2·7616	2·3506	3·0449
45	26·5571	23·9095	19·7948	25·1515	91	3·0033	2·5411	2·1956	2·7833
46	25·8129	23·2257	19·2686	24·4633	92	2·7243	2·3393	2·0580	2·5385
47	25·0769	22·5943	18·7703	23·7895	93	2·4210	2·1546	1·9363	2·3077
48	24·3472	21·9871	18·2941	23·1251	94	2·1181	1·9788	1·8250	2·0888
49	23·6215	21·3778	17·8345	22·4679	95	1·8181	1·8072	1·7084	1·8730
50	22·8980	20·7418	17·3861	21·8122	96	1·5426	1·6275	1·5714	1·6511
51	22·1748	20·0545	16·9443	21·1550	97	1·2926	1·4008	1·3750	1·4044
52	21·4497	19·2971	16·5039	20·4930	98	1·0568	1·1515	1·1471	1·1510
53	20·7272	18·4949	16·0687	19·8312	99	·8478	·8871	·8750	·8857
54	20·0111	17·6717	15·6421	19·1750	100	·5000	·5000	·5000	·5000
55	19·3048	16·8486	15·2275	18·5285					

From a consideration of those results, it will be seen that the Rural Districts of the two countries have shewn the nearest approximation; and this is precisely what would have been anticipated from a careful consideration of the elements entering into the formation of the respective Tables. In the Rural Districts of all countries, the condition of the population, as to occupation and employment, is more nearly the same than in the Town or City Districts; and since employment has been shewn to have so important an effect on the Duration of Life, the rates of mortality should differ less in the Rural Districts, where less diversity of employment exists. Before, however, fixing definitely on the Scotch Cities so high a rate of mortality as that shewn in Table M, it should be kept in view that one very important element of the investigation has not yet been touched upon. In considering the condition of the English Cities, it was shewn how an accidental combination of certain trades would produce a very different result from the fair average of the general population; so also, in the present comparison of the Scotch with the English Cities, may an excess of particular trades, not common to both Districts, or not existing in both Districts in the same ratio, modify the results. The inquiry will therefore not be complete till similar trades in both Districts be compared. To enter further, however, into that question would, as already stated, be to go beyond the limits assigned to this paper.

But as some curiosity may naturally be excited by the marked difference in the value of life, as shewn in the preceding Table, between the Scotch and English Cities, it has been thought of sufficient importance to form Mortality Tables for the general population of the City of Glasgow, in order to compare the results with English Cities.

These Tables—viz. O, P, Q, and R—have been formed exactly in the same manner as Tables A, B, C, D. It is therefore not necessary to enter further into that part of the question, than to state that the bases of the Tables are the Mortality Bills for the City of Glasgow for the ten years 1832–1841, and the population as enumerated in 1831 and 1841.

An inspection of Table Q will shew that of the male population of Glasgow alive at Age 10, one half is cut off between the ages 48–9, which is

20 years earlier than among Friendly Societies in the Rural Districts of England.
19 " " " " " " " Scotland.
17 " " " " " Town " "
16 " " " " " " " England.
13 " " " " " City " "
5 " " " " " " " Scotland.
3 " " " " " Clerks, which was the worst class of results formerly arrived at.

If the nature of this paper led to a more extended review of all the facts presented, [many

Table O.

Population of Glasgow for 1831 and 1841; with the Annual Rate of Increase during the intermediate period.

Age.	MALES.			FEMALES.			Ages.
	Population 1831.	Population 1841.	Annual Rate of Increase.	Population 1831.	Population 1841.	Annual Rate of Increase.	
Under 5	15422	17840	1·01467	14855	17544	1·01677	Under 5
5 — 10	13127	14552	1·01035	12580	14837	1·01664	5 — 10
10 — 15	10491	14252	1·03111	10720	14541	1·03092	10 — 15
15 — 20	8489	13677	1·04882	12256	16931	1·03281	15 — 20
20 — 30	15177	28304	1·06430	23008	32778	1·03602	20 — 30
30 — 40	12179	18890	1·04487	14240	20706	1·03814	30 — 40
40 — 50	8685	12047	1·03326	9329	12804	1·03220	40 — 50
50 — 60	5549	5991	1·00771	6099	7034	1·01436	50 — 60
60 — 70	3228	3364	1·00413	3692	4462	1·01911	60 — 70
70 — 80	1090	1282	1·01630	1502	1720	1·01365	70 — 80
80 — 90	260	256	—1·00140	385	447	1·01517	80 — 90
90 —100	26	22	—1·01670	32	41	1·02527	90 —100
100 and upward	1	1	1·00000	4	1	—1·14855	100 and upward
Total	93724	130478	1·03364	108702	143846	1·02641	Total

Table P.

Glasgow—Total of the Population as calculated for the 30th of June in each of the Years 1832–1841, inclusive; with the Sum of the Deaths for the corresponding years, as given in the Mortality Bills; and the Mortality per Cent. during the same period.

Age.	MALES.			FEMALES.			Age.
	Population.	Deaths.	Mortality. per Cent.	Population.	Deaths.	Mortality. per Cent.	
Under 5	167389	18846	10·6613	163155	16304	9·9929	Under 5
5 — 10	139087	2331	1·6759	138056	2134	1·5457	5 — 10
10 — 15	127201	989	·7775	127512	973	·7630	10 — 15
15 — 20	111753	1209	1·0818	147340	1147	·7777	15 — 20
20 — 30	218158	3211	1·4718	281626	3292	1·1689	20 — 30
30 — 40	156737	3336	2·1284	176405	3228	1·8300	30 — 40
40 — 50	104660	3276	3·1301	111731	3001	2·6859	40 — 50
50 — 60	57928	2552	4·4054	66086	2628	3·9766	50 — 60
60 — 70	33033	2564	7·7619	41084	2651	6·4526	60 — 70
70 — 80	11942	1956	16·3791	16212	2244	13·8416	70 — 80
80 — 90	2580	780	30·2325	4190	1012	24·1527	80 — 90
90 —100	238	92	38·6554	368	155	42·1196	90 —100
100 and upwards	10	9	90·0000	19	15	78·9476	100 and upwards
Total	1130716	41151	3·6393	1273784	38784	3·0447	Total.

Table Q.

Glasgow.—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	1316	1·3157	75·988	56	36836	1669	4·5303	22·075
11	98684	1121	1·1360	88·028	57	35167	1682	4·7827	20·907
12	97563	980	1·0047	99·502	58	33485	1700	5·0768	19·697
13	96583	890	·9214	108·531	59	31785	1720	5·4125	18·474
14	95693	848	·8863	112·829	60	30065	1728	5·7482	17·397
15	94845	853	·8993	111·198	61	28337	1724	6·0838	16·437
16	93992	902	·9601	104·156	62	26613	1708	6·4195	15·576
17	93090	948	1·0186	98·135	63	24905	1682	6·7551	14·804
18	92142	990	1·0746	93·023	64	23223	1647	7·0907	14·102
19	91152	1028	1·1282	88·652	65	21576	1625	7·5315	13·277
20	90124	1063	1·1794	84·818	66	19951	1612	8·0776	12·379
21	89061	1094	1·2282	81·433	67	18339	1601	8·7289	11·456
22	87967	1123	1·2769	78·309	68	16738	1588	9·4854	10·543
23	86844	1151	1·3257	75·415	69	18150	1568	10·3472	9·662
24	85693	1178	1·3744	72·780	70	13582	1522	11·2089	8·921
25	84515	1206	1·4265	70·077	71	12060	1458	12·0906	8·271
26	83309	1235	1·4820	67·476	72	10602	1375	12·9723	7·710
27	82074	1265	1·5411	64·893	73	9227	1280	13·8740	7·210
28	80809	1296	1·6036	62·344	74	7947	1171	14·7397	6·784
29	79513	1328	1·6695	59·880	75	6776	1064	15·7061	6·365
30	78185	1357	1·7354	57·637	76	5712	957	16·7573	5·967
31	76828	1384	1·8013	55·525	77	4755	852	17·9132	5·580
32	75444	1409	1·8669	53·562	78	3903	748	19·1539	5·222
33	74035	1431	1·9328	51·733	79	3155	648	20·5353	4·869
34	72604	1451	1·9982	50·050	80	2507	550	21·9206	4·562
35	71153	1473	2·0694	48·333	81	1957	456	23·3060	4·290
36	69680	1496	2·1465	46·577	82	1501	371	24·6913	4·050
37	68184	1520	2·2294	44·863	83	1130	295	26·0766	3·834
38	66664	1545	2·3180	43·141	84	835	229	27·4619	3·642
39	65119	1571	2·4128	41·442	85	606	174	28·7386	3·479
40	63548	1594	2·5076	39·872	86	432	129	29·9067	3·343
41	61954	1612	2·6024	38·432	87	303	94	30·9662	3·229
42	60342	1628	2·6972	37·078	88	209	67	31·9770	3·127
43	58714	1639	2·7919	35·817	89	142	47	32·7593	3·053
44	57075	1654	2·8975	34·507	90	95	32	33·6016	2·976
45	55421	1668	3·0096	33·223	91	63	21	34·4439	2·904
46	53753	1682	3·1282	31·969	92	42	14	35·2862	2·834
47	52071	1694	3·2535	30·731	93	28	10	36·1285	2·768
48	50377	1706	3·3853	29·542	94	18	6	36·9708	2·705
49	48671	1710	3·5128	28·466	95	12	4	38·6715	2·586
50	46961	1710	3·6404	27·473	96	8	3	41·2307	2·425
51	45251	1705	3·7679	26·539	97	5	2	44·6483	2·240
52	43546	1696	3·8954	25·674	98	3	1	48·9244	2·044
53	41850	1684	4·0229	24·857	99	2	1	54·0589	1·850
54	40166	1667	4·1504	24·096	100	1	1	59·1934	1·689
55	38499	1663	4·3195	23·148					

TABLE Q, *continued.*

GLASGOW—*Females.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	1433	1·4327	69·784	56	42123	1705	4·0478	24·704
11	98567	1258	1·2761	78·370	57	40418	1717	4·2479	23·540
12	97309	1121	1·1515	86·806	58	38701	1731	4·4718	22·361
13	96188	1018	1·0588	94·429	59	36970	1745	4·7194	21·191
14	95170	950	·9979	100·210	60	35225	1750	4·9670	20·133
15	94220	724	·7687	130·090	61	33475	1746	5·2146	19·175
16	93496	722	·7717	129·584	62	31729	1733	5·4622	18·308
17	92774	727	·7838	127·584	63	29996	1713	5·7098	17·513
18	92047	741	·8051	124·208	64	28283	1685	5·9574	16·787
19	91306	763	·8356	119·675	65	26598	1677	6·3033	15·865
20	90543	793	·8755	114·220	66	24921	1682	6·7474	14·821
21	89750	830	·9244	108·178	67	23239	1694	7·2898	13·717
22	88920	865	·9733	102·743	68	21545	1704	7·9104	12·642
23	88055	900	1·0222	97·847	69	19841	1716	8·6493	11·562
24	87155	934	1·0711	93·371	70	18125	1702	9·3882	10·652
25	86221	969	1·1235	88·968	71	16423	1663	10·1271	9·872
26	85252	1005	1·1793	84·818	72	14760	1604	10·8660	9·200
27	84247	1043	1·2385	80·710	73	13156	1529	11·6249	8·606
28	83204	1083	1·3012	76·864	74	11627	1438	12·3638	8·091
29	82121	1123	1·3673	73·153	75	10189	1341	13·1612	7·599
30	80998	1161	1·4334	69·784	76	8848	1240	14·0170	7·133
31	79837	1197	1·4995	66·667	77	7608	1136	14·9312	6·698
32	78640	1231	1·5654	63·898	78	6472	1029	15·9039	6·289
33	77409	1263	1·6315	61·275	79	5443	922	16·9350	5·907
34	76146	1293	1·6976	58·893	80	4521	812	17·9661	5·565
35	74853	1323	1·7676	56·561	81	3709	705	18·9972	5·263
36	73530	1354	1·8415	54·289	82	3004	602	20·0283	4·993
37	72176	1386	1·9195	52·083	83	2402	506	21·0594	4·748
38	70790	1417	2·0012	49·975	84	1896	419	22·0905	4·527
39	69373	1448	2·0868	47·916	85	1477	344	23·2747	4·297
40	67925	1476	2·1724	46·041	86	1133	279	24·6121	4·063
41	66449	1500	2·2580	44·287	87	854	223	26·1025	3·831
42	64949	1522	2·3436	42·662	88	631	175	27·7461	3·604
43	63427	1541	2·4292	41·169	89	456	135	29·5428	3·385
44	61886	1556	2·5148	39·761	90	321	101	31·3395	3·191
45	60330	1574	2·6091	38·329	91	220	73	33·1362	3·018
46	58756	1594	2·7120	36·873	92	147	51	34·9329	2·863
47	57162	1614	2·8237	35·411	93	96	35	36·7296	2·723
48	55548	1635	2·9441	33·967	94	61	24	38·5263	2·595
49	53913	1657	3·0732	32·541	95	37	15	40·7002	2·457
50	52256	1673	3·2023	31·230	96	22	9	43·2513	2·312
51	50583	1685	3·3314	30·021	97	13	6	46·1796	2·165
52	48898	1692	3·4605	28·893	98	7	4	49·4852	2·020
53	47206	1695	3·5895	27·855	99	3	2	53·1680	1·881
54	45511	1692	3·7186	26·889	100	1	1	56·8508	1·759
55	43819	1696	3·8709	25·833					

many remarkable coincidences would be seen to have taken place, and one among these must be already obvious. The general results for Friendly Societies in England and Wales were found to be more favourable to life than the results for the whole population of England and Wales, and that in both sexes; so, also, were the results for the Members of Friendly Societies in Liverpool more favourable than those for the whole population of Liverpool; and here it will likewise be seen that the mortality of the general population of Glasgow is greater than among the Members of Friendly Societies in the City Districts of Scotland.

The difference between the Equation for Age 10 in Male and Female Life for the whole population of Glasgow is 3·125 years, while in the general population of England and Wales it is a little above one year. This suggests the mention of another feature which presents itself in this inquiry. It appears that the higher the absolute value of Life in any class of results, the less distinction will there be found between Male and Female Life. Thus—

Equation of Life for Age 10.

Friendly Societies in England and Wales	Females	= 56·749	
	Males	= 56·408	
		———— ·341	of a year
Total Population of England and Wales	Females	= 53·554	
	Males	= 52·308	
		———— 1·249	,,
Whole Population of Glasgow . .	Females	= 41·346	
	Males	= 38·221	
		———— 3·125	,,

If comparisons were made between the sexes in the intermediate classes of results, a development of the same feature would be seen. As has already been stated, where the Duration of Life is reduced below its average standard by the prevalence of unhealthy occupations, the influence will be more strongly felt in the male than in the female sex.

If the Expectation of Life for the City of Glasgow, as given in Table R, be now referred to, the remarkable depreciation in the duration of life there will appear somewhat startling. No Table of Mortality hitherto published has shewn any thing like so low an estimate. Liverpool has been frequently referred to as an example of the short Duration of Life; but a comparison of the Expectation of Male Life for Liverpool, as given at page 59, with the results in Table R, will shew

At Age 30	a higher value by	3·101 years
40	,,	2·548
50	,,	1·535

[The mortality

Table R.

Expectation.

Age.	Glasgow, whole Population.		Dundee, whole Population.		Age.	Glasgow, whole Population.		Dundee, whole Population.	
	Males.	Females.	Males.	Females.		Males.	Females.	Males.	Females.
10	37·3954	39·9471	43·2973	45·8731	56	11·7116	12·9541	13·8635	15·1653
11	36·8874	39·4286	42·6385	45·2353	57	11·2426	12·4794	13·3322	14·6185
12	36·4055	38·9319	41·9362	44·5587	58	10·7822	12·0109	12·8117	14·0791
13	35·6688	38·3797	41·2102	43·8632	59	10·3322	11·5499	12·3050	13·5480
14	34·9959	37·7849	40·4621	43·1501	60	9·8946	11·0973	11·8155	13·0262
15	34·3043	37·1609	39·7027	42·4173	61	9·4675	10·6513	11·3407	12·5117
16	33·6111	36·4448	38·9405	41·6723	62	9·0485	10·2099	10·8784	12·0027
17	32·9317	35·7245	38·1824	40·9205	63	8·6347	9·7709	10·4266	11·4975
18	32·2656	35·0027	37·4327	40·1647	64	8·2239	9·3324	9·9832	10·9941
19	31·6106	34·2827	36·6930	39·4058	65	7·8135	8·8919	9·5459	10·4907
20	30·9655	33·5674	35·9632	38·6541	66	7·4092	8·4564	9·1174	9·9934
21	30·3291	32·8596	35·2426	37·9096	67	7·0165	8·0322	8·6999	9·5083
22	29·7000	32·1616	34·5307	37·1716	68	6·6398	7·6248	8·2956	9·0400
23	29·0776	31·4726	33·8269	36·4398	69	6·2834	7·2367	7·9057	8·5932
24	28·4615	30·7228	33·1311	35·7138	70	5·9510	6·8745	7·5320	8·1719
25	27·8512	30·1206	32·4423	34·9934	71	5·6390	6·5351	7·1718	7·7724
26	27·2472	29·4573	31·7601	34·2779	72	5·3457	6·2150	6·8216	7·3916
27	26·6496	28·8027	31·0839	33·5677	73	5·0678	5·9118	6·4787	7·0261
28	26·0590	28·1575	30·8133	32·8626	74	4·8035	5·6235	6·1524	6·6730
29	25·4756	27·5223	29·7478	32·1624	75	4·5472	5·3466	5·8006	6·3288
30	24·8998	26·8970	29·0866	31·4666	76	4·3011	5·0812	5·4679	5·9961
31	24·3308	26·2808	28·4291	30·7754	77	4·0661	4·8278	5·1470	5·6777
32	23·7679	25·6732	27·7754	30·0879	78	3·8446	4·5875	4·8427	5·3757
33	23·2108	25·0735	27·1245	29·4037	79	3·6376	4·3602	4·5591	5·0924
34	22·6584	24·4811	26·4761	28·7225	80	3·4485	4·1474	4·3012	4·8305
35	22·1102	23·8953	25·8297	28·0439	81	3·2772	3·9457	4·0706	4·5872
36	21·5670	23·3163	25·1877	27·3688	82	3·1209	3·7547	3·8569	4·3604
37	21·0293	22·7443	24·5520	26·6987	83	2·9814	3·5703	3·6629	4·1473
38	20·4974	22·1798	23·9248	26·0344	84	2·8581	3·3898	3·4867	3·9456
39	19·9718	21·6227	23·3075	25·3768	85	2·7491	3·2096	3·3272	3·7536
40	19·4532	21·0730	22·7017	24·7270	86	2·6551	3·0322	3·1813	3·5712
41	18·9409	20·5300	22·1068	24·0840	87	2·5726	2·8595	3·0488	3·3975
42	18·4335	19·9925	21·5218	23·4473	88	2·5047	2·6933	2·9260	3·2323
43	17·9307	19·4603	20·9457	22·8162	89	2·4507	2·5351	2·8109	3·0758
44	17·4313	18·9324	20·3775	22·1896	90	2·4158	2·3910	2·7034	2·9282
45	16·9366	18·4079	19·8168	21·5671	91	2·3889	2·2591	2·5997	2·7854
46	16·4466	17·8875	19·2620	20·9498	92	2·3333	2·1327	2·5075	2·6492
47	15·9618	17·3724	18·7129	20·3391	93	2·2500	2·0000	2·4022	2·5119
48	15·4817	16·8626	18·1679	19·7356	94	2·2223	1·8606	2·3000	2·3712
49	15·0061	16·3589	17·6266	19·2264	95	2·0761	1·7432	2 1786	2·2192
50	14·5350	15·8617	17·0891	18·5541	96	1·8750	1·5909	2·0179	2·0474
51	14·0654	15·3698	16·5521	17·9757	97	1·7000	1·3461	1·7973	1·8297
52	13·5965	14·8822	16·0160	17·4041	98	1·5000	1·0714	1·5000	1·5508
53	13·1273	14·3977	15·4795	16·8381	99	1·0000	·8333	1·0000	1·1315
54	12·6567	13·9153	14·9417	16·2766	100	·5000	·5000	·5000	·5000
55	12·1831	13·4333	14·4014	15·7186					

The mortality of a population like that of Glasgow is subject to remarkable fluctuations, shewing an extreme difference in some years of about 68 per cent., or a mean fluctuation of about 32 per cent. An inspection of the total male deaths for all ages, for each of the ten years 1832–1842, will render this evident.

Total Deaths in 1832 . .	4811	Total Deaths in 1837 . .	5423
„ 1833 . .	3229	„ 1838 . .	2490
„ 1834 . .	3255	„ 1839 . .	3898
„ 1835 . .	3726	„ 1840 . .	4470
„ 1836 . .	4334	„ 1841 . .	4514

It will further be seen that those remarkable fluctuations are due chiefly to the mortality in mature life, and not to the mortality in infancy, as some writers have believed.

Year.	From 20 to 50.	In the First Year of Life.	Year.	From 20 to 50.	In the First Year of Life.
In 1832 .	1795 .	332	In 1837 .	1991 .	371
1833 .	902 .	306	1838 .	1010 .	336
1834 .	923 .	313	1839 .	966 .	318
1835 .	885 .	365	1840 .	1346 .	404
1836 .	1279 .	115	1841 .	1278 .	381

The preceding will shew, that while the extreme difference in the mortality from ages 20 to 50 is 125 per cent., for the first year of life it is only 32 per cent. If the mean fluctuation for ages 20 to 30 be taken, it will be found to be 53 per cent., while that for the first year of life is only 14 per cent. Were the inspection extended to the mortality of female life, similar results would be obtained. Notwithstanding the inferior numbers in infant life, the fluctuation is confined within narrower limits than the mortality of mature life; and this law is in obedience to the doctrine of probability, when applied to any other subject, as well as to the mortality of life. For whenever the intensity which determines any result increases—or in other words, when the probability of any event approaches unity—so also will the fluctuation in a series of events be reduced in amount.

It is evident from the preceding results of the Mortality in Glasgow, that a Table of the Expectation of Life calculated for one period of years—for example, the three years 1833, 1834, 1835—would differ widely from a Table founded on the results of the succeeding period of three years, and that the next succeeding period of three years would also differ in a marked degree from either of these: it has on that account been thought the better course to embrace the results of the whole ten years. On a previous occasion, a Table of the Expectation of Life for the five years, 1836–1840, had been calculated; and the results were for ages

$$20 = 27{\cdot}624 \qquad 40 = 21{\cdot}711 \qquad 50 = 16{\cdot}590$$

bringing the Expectation of Life above that given for the whole population of Liverpool,

in the Fifth Report of the Registrar General. It would therefore be rash to conclude that the public health of Glasgow is inferior to that of Liverpool; for if the same means existed of calculating the mortality of Liverpool during the ten years to which the results for Glasgow relate, it might then be found that the Expectation of Life, on an average of that number of years, was overstated by the Registrar General, whose figures were derived from the mortality of one year only.

An inspection of TABLE R will shew that Female Life in Glasgow, as elsewhere, is of higher value than Male Life.

	At Age 30.	At Age 40.	At Age 50.
The Expectation of Females is	26·8970	21·0730	15·8617
And of Males . . .	24·8998	19·4532	14·5350
Difference	1·9972	1·6198	1·3267

TABLE S.

DUNDEE.—Total of the Populations as calculated for the 30th of June in each of the Years 1835–1844 inclusive; with the sum of the Deaths for the Corresponding Years as given in the Mortality Bills, and the Mortality per Cent. during the same period.

Ages.	MALES.			FEMALES.			Age.
	Population.	Deaths exclusive of Stillborn.	Mortality.	Population.	Deaths exclusive of Stillborn.	Mortality.	
Under 5	41450	3328	8·0289	41513	3042	7·3302	Under 5
5 — 10	34005	413	1·2145	32622	410	1·2568	5 — 10
10 — 20	60931	377	·6187	67367	366	·5432	10 — 20
20 — 30	46877	481	1·0260	67086	569	·8481	20 — 30
30 — 40	39488	562	1·4232	46323	553	1·1950	30 — 40
40 — 50	24931	585	2·3464	31782	585	1·8406	40 — 50
50 — 60	14826	485	3·2712	18089	533	2·9465	50 — 60
60 — 70	8537	528	6·1848	12888	633	4·9116	60 — 70
70 — 80	4113	476	11·5730	5128	552	10·7644	80 — 80
80 — 90	831	204	24·5500	1197	252	21·0526	90 — 90
90 —100	67	13	19·4030	155	34	21·9289	90 —100
100 and upwards	0	2	0	19	2	10·5263	100 and upwards
	276056	7454	2·7000	324129	7531	2·3234	

The preceding results seem to point out a higher rate of mortality as pervading all the groups of observations brought into comparison from Scotland; and it is therefore to be regretted that the Registration Act does not extend to that country, and afford a certain means of solving so important a question. The subject, however, in its present state, has been thought of sufficient importance to warrant the calculation of Mortality Tables for the Town of Dundee; and accordingly TABLES S and T have been deduced from the Mortality Bills of that Town for the ten years 1835–1844, and the Census of the Population in 1841, on the principles described for the formation of Tables B and C. The Expectation of Life, as resulting from these Tables, will be found in Table R.

An inspection of TABLE T will shew that in Dundee the Equation of Male Life for Age 10 takes place at Age 55–6, which is seven years beyond the results obtained in Table Q for the whole population of Glasgow, and even two years higher than the Equation of Life for the Members of Friendly Societies in the average of the Scotch Cities. This result will no doubt be unexpected by some inquirers, as Dundee has usually been held up as the type of unhealthy Cities; but the present results shew the necessity of extended observations before drawing any conclusions, the remarks made relative to the fluctuation of Mortality in Glasgow being equally applicable to Dundee. The following Abstract will give the comparative value of Male Life in the gross population of Glasgow, Liverpool, and Dundee.

Age.	Expectation of Life in			Age.
	Glasgow, Table R.	Liverpool, Reg. Gen. page xxvii. 5th Report.	Dundee, Table R.	
20	30·9665	33·0000	35·9632	20
25	27·8512	30·0000	32·4423	25
30	24·8998	27·0000	29·0866	30
35	22·1102	23·0000	25·8297	35
40	19·4532	21·0000	22·7017	40
45	16·9366	18·0000	19·8168	45
50	14·5350	16·0000	17·0891	50

The value of Life in Dundee will thus be seen to stand higher than in either of the other Cities. If a complete system of Registration existed in Scotland, accurate means would be afforded of carrying out a satisfactory inquiry as to the relative value of life in different Districts; but so far as the more imperfect system of Local Registration will admit of judging, it does not appear that the Duration of Life in the large Towns of Scotland should be regarded as so much below that of Cities in England.

[For many purposes

Table T.

Trades not Classified—Dundee—*Males.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	791	·7910	126·422	56	49251	1669	3·3905	29·490
11	99209	696	·7020	142·450	57	47582	1714	3·6023	27·762
12	98513	647	·6568	152·253	58	45868	1767	3·8538	25·947
13	97866	602	·6148	162·655	59	44101	1828	4·1451	24·125
14	97264	582	·5981	167·196	60	42273	1875	4·4365	22·538
15	96682	583	·6034	165·728	61	40398	1909	4·7278	21·151
16	96099	601	·6259	159·770	62	38489	1931	5·0192	19·924
17	95498	630	·6601	151·492	63	36558	1941	5·3106	18·829
18	94868	664	·7003	142·796	64	34617	1939	5·6020	17·851
19	94204	698	·7410	134·953	65	32678	1942	5·9429	16·827
20	93506	731	·7818	127·910	66	30736	1946	6·3332	15·790
21	92775	763	·8225	121·581	67	28790	1950	6·7731	14·765
22	92012	794	·8632	115·848	68	26840	1948	7·2604	13·774
23	91218	825	·9039	110·632	69	24892	1941	7·8012	12·819
24	90393	854	·9446	105·865	70	22951	1914	8·3400	11·990
25	89539	882	·9851	101·513	71	21037	1867	8·8788	11·263
26	88657	909	1·0255	97·466	72	19170	1805	9·4176	10·618
27	87748	935	1·0656	93·809	73	17365	1728	9·9564	10·044
28	86813	960	1·1055	90·416	74	15637	1641	10·4953	9·524
29	85853	983	1·1453	87·336	75	13996	1565	11·1859	8·937
30	84870	1005	1·1850	84·388	76	12431	1495	12·0283	8·313
31	83865	1027	1·2247	81·633	77	10936	1424	13·0225	7·680
32	82838	1047	1·2644	79·114	78	9512	1347	14·1684	7·057
33	81791	1066	1·3041	76·687	79	8165	1262	15·4661	6·464
34	80725	1084	1·3438	74·405	80	6903	1162	16·7638	5·967
35	79641	1110	1·3940	71·736	81	5741	1036	18·0615	5·537
36	78531	1142	1·4548	68·729	82	4705	911	19·3592	5·165
37	77389	1181	1·5261	65·531	83	3794	784	20·6569	4·840
38	76208	1225	1·6080	62·189	84	3010	661	21·9546	4·556
39	74983	1274	1·7003	58·824	85	2349	545	23·2132	4·308
40	73709	1321	1·7927	55·772	86	1804	441	24·4327	4·093
41	72388	1364	1·8850	53·050	87	1363	349	25·6131	3·905
42	71024	1404	1·9774	50·582	88	1014	271	26·7544	3·738
43	69620	1440	2·0697	48·309	89	743	207	27·8566	3·589
44	68180	1474	2·1619	46·253	90	536	155	28·9588	3·453
45	66706	1503	2·2542	44·366	91	381	115	30·0610	3·327
46	65203	1530	2·3465	43·608	92	266	82	31·1632	3·209
47	63673	1552	2·4388	41·000	93	184	59	32·2654	3·299
48	62121	1572	2·5313	39·510	94	125	41	33·3676	2·997
49	60549	1592	2·6237	38·110	95	84	28	34·4638	2·902
50	58957	1601	2·7162	36·819	96	56	19	35·5071	2·816
51	57356	1611	2·8087	35·600	97	37	13	36·4348	2·745
52	55745	1617	2·9012	34·471	98	24	8	37·2708	2·683
53	54128	1620	2·9937	33·400	99	16	8	38·0060	2·631
54	52508	1620	3·0860	32·404	100	8	8	38·6500	2·587
55	50888	1637	3·2184	31·075					

TABLE T, *continued.*

DUNDEE.—*Females.*

Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.	Ages.	Living.	Dying.	Mortality per Cent.	Specific Intensity.
10	100000	792	·7920	126·263	56	54982	1648	2·9980	33·356
11	99208	712	·7180	139·276	57	53334	1685	3·1602	31·646
12	98496	676	·6864	145·688	58	51649	1724	3·3395	29·940
13	97820	643	·6578	152·022	59	49925	1765	3·5360	28·281
14	97177	605	·6228	160·565	60	48160	1797	3·7325	26·788
15	96572	584	·6050	165·289	61	46363	1821	3·9290	25·452
16	95988	575	·5994	166·834	62	44542	1837	4·1255	24·237
17	95413	573	·6010	166·389	63	42705	1845	4·3220	23·137
18	94840	573	·6042	165·508	64	40860	1846	4·5185	22·129
19	94267	598	·6347	157·555	65	39014	1869	4·7928	20·864
20	93669	623	·6652	150·331	66	37145	1911	5·1446	19·436
21	93046	647	·6957	143·740	67	35234	1964	5·5763	17·934
22	92399	671	·7262	137·703	68	33270	2024	6·0859	16·431
23	91728	694	·7567	132·153	69	31246	2085	6·6731	14·986
24	91034	717	·7872	127·033	70	29161	2117	7·2604	13·774
25	90317	739	·8185	122·175	71	27044	2122	7·8479	12·742
26	89578	762	·8506	117·564	72	24922	2101	8·4332	11·858
27	88816	785	·8836	113·173	73	22821	2058	9·0205	11·085
28	88031	808	·9174	109·004	74	20763	1994	9·6038	10·412
29	87223	830	·9521	105·031	75	18769	1928	10·2758	9·728
30	86393	853	·9868	101·338	76	16841	1858	11·0365	9·058
31	85540	874	1·0215	97·847	77	14983	1780	11·8859	8·410
32	84666	894	1·0562	94·697	78	13203	1692	12·8220	7·800
33	83772	914	1·0909	91·659	79	11511	1594	13·8508	7·220
34	82858	933	1·1256	88·810	80	9917	1475	14·8796	6·720
35	81925	955	1·1663	85·763	81	8442	1343	15·9084	6·285
36	80970	982	1·2129	82·440	82	7099	1202	16·9372	5·903
37	75988	1012	1·2655	78·989	83	5897	1059	17·9660	5·565
38	78976	1045	1·3240	75·929	84	4838	919	18·9949	5·266
39	77931	1082	1·3886	71·994	85	3919	787	20·0714	4·983
40	76849	1116	1·4531	68·823	86	3132	664	21·1955	4·717
41	75733	1149	1·5177	65·876	87	2468	552	22·3673	4·470
42	74584	1180	1·5823	63·211	88	1916	452	23·5868	4·239
43	73404	1208	1·6469	60·716	89	1464	364	24·8539	4·024
44	72196	1235	1·7115	58·411	90	1100	287	26·1210	3·828
45	70961	1266	1·7852	56.022	91	813	223	27.3882	3·651
46	69695	1302	1·8682	53·533	92	590	169	28·6553	3·489
47	68393	1340	1·9604	51·020	93	421	126	29·9225	3·342
48	67053	1382	2·0617	48·497	94	295	92	31·1897	3·206
49	65671	1426	2·1723	46.041	95	203	66	32·5032	3·077
50	64245	1466	2·2829	43·082	96	137	46	33·8471	2·954
51	62779	1502	2·3935	41·771	97	91	32	35·2034	2·841
52	61277	1534	2·5041	39·936	98	59	21	36·5720	2·734
53	59743	1562	2·6147	38·241	99	38	14	37·9710	2·634
54	58181	1585	2·7253	36·697	100	24	24	39·3000	2·545
55	56596	1614	2·8531	35·051					

For many purposes, the mode of representing the value of life at various ages, under the expression "Expectation of Life," will be found inadequate. The method by which that value is obtained for a given age, involves the consideration of the decrements of life at every superior age; and therefore, in any Table, the Expectation of Life, even at younger ages, will be affected by the irregularities of mortality at the older ages. It consequently sometimes happens that a comparison of different Tables, especially at the younger and middle periods of life, may shew an equal or nearly equal Expectation, while there are in reality very different chances under the two Tables of living a given number of years; and again, Expectation Tables may shew very different values for the same age, when according to the nature of the data there are equal chances of living a given number of years.

From what has been said it will be seen, that although the "Expectation of Life" expresses the true average duration in years of a certain number of individuals at a given age, yet it does not represent the chances of surviving an equivalent number of years; and consequently, for medical and other purposes, in which it is required to determine the relative value, improvement, or other change which may have taken place within a given period of life, another expression must be found. The Equation of Life, which represents a term of years for which there is an equal probability of living, appears to be the best mode to determine the comparative value of life in different Classes or different Districts within the same period of years, as the expression is affected by the mortality within those ages only. In order to shew the relation which the Equation of Life bears to the Expectation of Life, the expression under each form, corresponding to the decennial ages, are given for various classes of results in

TABLE U.

EQUATION OF LIFE—ENGLAND AND WALES.

Ages.	England and Wales.				Friendly Societies (Males)								Females.		Ages.
	Males.		Females.		Rural Districts.		Town Districts.		City Districts.		Rural, Town & City.		Rural, Town & City.		
	Equation.	Expectation	Equation.	Expectation	Equation.	Expectation	Equation.	Expectation	Equation.	Expectation	Equation.	Expectation	Equation.	Expectation	
10	52·305	47·756	53·554	48·383	58·375	53·258	54·315	50·537	51·743	47·913	56·408	51·810	56·749	49·493	10
20	44·212	40·691	43·706	41·598	49·353	45·355	45·201	42·274	43·052	40·015	47·434	43·774	49·702	45·264	20
30	36·482	34·099	38·066	35·167	40·813	38·407	36·517	34·575	34·920	32·860	38·972	36·605	41·017	38·184	30
40	28·790	27·476	30·412	28·733	32·129	30·972	28·135	27·153	27·218	26·087	30·531	29·331	32·248	30·781	40
50	21·255	20·846	22·697	22·055	23·609	23·470	20·053	19·973	20·056	19·927	22·344	22·192	23·894	23·820	50
60	14·285	14·585	15·355	15·523	15·923	16·652	12·815	13·761	13·295	13·769	14·945	15·694	16·236	17·238	60

SCOTLAND.—*Males.*

Ages.	Rural Districts.		Town Districts.		City Districts.		Rural, Town and City.		Ages.
	Equation.	Expectation.	Equation.	Expectation.	Equation.	Expectation.	Equation.	Expectation.	
10	57·474	53·051	55·828	50·743	43·371	42·637	54·567	50·803	10
20	48·467	44·990	46·407	42·752	34·753	34·586	45·656	42 722	20
30	39·995	37·783	37·106	35·040	27·831	28·635	37·478	35 651	30
40	31·493	30·305	28·020	27·641	21·255	22·647	29·539	28 657	40
50	23·266	22·898	19·441	20·742	16·409	17·386	21·917	21 812	50
60	15·990	16·018	11·217	13·121	12·688	13·335	15·174	15 018	60

TRADES IN FRIENDLY SOCIETIES (MALES) ENGLAND.

Ages.	Labourers. Rural Districts.		Clerks. Rural, Town and City.		Plumbers, Painters, and Glaziers. Rural, Town and City.		Bakers. Rural, Town and City.		Miners. Rural, Town and City.		Ages.
	Equation.	Expectation.	Equation.	Expectation.	Equation.	Expectation.	Equation.	Expectation.	Equation.	Expectation	
10	61·512	56·005	41·920	39·985	46·666	43·066	49·546	47·982	51·402	48·516	10
20	52·240	47·906	33·500	31·835	39·101	36·904	41·034	40·027	42·186	40·670	20
30	43·341	40·597	27·416	27·576	31·262	30·508	33·039	32·357	33·187	33·157	30
40	34·349	32·769	19·945	21 857	23·508	24·305	25·001	24·476	24·067	24·920	40
50	25·634	25·075	13·548	16 046	15·384	17·096	19·470	19·091	15·890	17·535	50
60	17·574	17·821	11·616	12·426	9·779	12·168	13·630	14·063	10·414	11·859	60

The terms in the respective columns headed Equation, were determined as follows:—

Let $\mathrm{E}\,x$ = the number alive in the columns headed "Living" in Tables C, F, I, &c., &c., at the given age x.

Then $\frac{\mathrm{E}\,x}{2}$ = the number alive at an advanced age, $x + n$ which will always be intermediate between the proximate years of age $x + n - \Phi$, and $x + n + 1 - \Phi$, the fraction Φ of which is determined as follows:—

$$\lambda\,(\mathrm{E}\,x + n - \Phi - \mathrm{E}\,x + n) - \lambda\,(\mathrm{E}\,x + n - \Phi - \mathrm{E}\,x + n + 1 - \Phi)$$

An inspection of TABLE U will shew, that at the earlier ages the Equation of Life always exceeds the Expectation, and that at those ages there is always a chance of outliving the period of years represented by the Expectation of Life; but the converse is the case for the older ages. It will also be further seen, that in those Tables giving a higher absolute value to Life, the Equation retains its superiority over the Expectation till a more advanced period of years; or in other words, if the Equation and Expectation of Life in any Table be compared, the more advanced the period of life at which the two expressions approximate to equal values, the higher is the absolute value of life throughout that Table. An example of this will be seen in observing the respective terms for the City and Rural Districts, in the former of which the approximation happens ten years earlier than in the other: again, if the results for the Labourers in the Rural Districts be compared with the results for Clerks, thirty years' difference will be found; and on comparison of the results for other Classes in Table U, intermediate periods of approximation will appear.

INFLUENCE OF LOCALITY ON SICKNESS.

The next part of this question to be brought under consideration is the Influence of Locality on the amount of Sickness among the members of Friendly Societies.

In Tables E and L, the amount of Sickness is given among a certain number of persons, at every year of life, expressed in weeks and decimals of a week; and in an adjacent column will be found the amount of sickness among the same number of persons in quinquennial periods of life, also the average amount of Sickness to each individual per annum. In the same Table the amount of Sickness under the various arrangements described for each of the Districts recognised in the Tables of Mortality is also given; and an inspection of the last column will give a general idea of the relative amount of Sickness in those Districts.

Table V has been formed from the last column, by interpolating the terms for the intermediate years of age, by the method of third differences; and the adjusted results were afterwards obtained in the same manner as that described for the Rates of Mortality in Tables C and F, in the early part of this Paper.

Owing to the greater practical convenience of collecting and arranging the data, as well as of subsequently applying the results to the more useful purposes of Friendly Societies, the Amount of Sickness throughout the whole of this Paper is invariably expressed under the denomination of weeks. For example, in Table V, opposite to Age 35, and under the head "Rural Districts," the decimal expression ·8991 signifies that the average Amount of Sickness to each individual per annum is that fraction of a week. And again, opposite the same Age, in the column "City Districts," the average Amount of Sickness to each person in the course of a year is 1·2372 weeks. When, however, it is required to change the expression to the more scientific denomination of the fraction of a year, that may be easily done by multiplying any of the results by ·019178.

[An examination

Table V.

Average Sickness per Annum to Each Person at the Following Ages—Expressed in Weeks.

Age.	ENGLAND AND WALES.				SCOTLAND.	Age.	ENGLAND AND WALES.				SCOTLAND.
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town & City Districts
10	·2257	1·2666	·3453	·4659	·2197	56	2·5240	3·4903	3·5246	2·8956	2·8279
11	·4233	1·0820	·3453	·5616	·2197	57	2·7756	3·7450	3·7545	3·1371	3·0307
12	·5969	·9392	·3453	·6412	·2446	58	3·0811	4·0670	3·9932	3·4293	3·2841
13	·7205	·8382	·3453	·7046	·2945	59	3·4402	4·4564	4·2408	3·7722	3·5879
14	·8041	·7788	·3453	·7520	·3692	60	3·8531	4·9132	4·4973	4·1657	3·9423
15	·8437	·7612	·3453	·7833	·4689	61	4·3198	5·4373	4·7626	4·6099	4·3472
16	·8414	·7853	·3453	·7984	·5935	62	4·9308	6·1219	5·0357	5·1904	4·8894
17	·8397	·8069	·3674	·8117	·6946	63	5·6863	6·9670	5·3167	5·9073	5·5687
18	·8387	·8259	·4115	·8230	·7722	64	6·5862	7·9726	5·6054	6·7605	6·3853
19	·8384	·8424	·4777	·8324	·8264	65	7·6305	9·1387	5·9019	7·7501	7·3391
20	·8387	·8564	·5659	·8398	·8570	66	8·8192	10·4652	6·2062	8·8760	8·4302
21	·8397	·8678	·6762	·8453	·8642	67	10·0700	11·7646	6·7643	10·0679	9·6159
22	·8426	·8746	·7713	·8515	·8688	68	11·3829	13·0368	7·5761	11·3257	10·8964
23	·8475	·8767	·8511	·8585	·8709	69	12·7579	14·2817	8·6417	12·6494	12·2715
24	·8542	·8741	·9157	·8661	·8703	70	14·1949	15·4995	9·9610	14·0391	13·7414
25	·8630	·8649	·9650	·8744	·8672	71	15·6940	16·6901	11·5341	15·4947	15·3060
26	·8736	·8551	·9991	·8834	·8615	72	17·1025	18·1368	13·5632	16·9652	16·9019
27	·8802	·8504	1·0303	·8915	·8557	73	18·4205	19·8395	16·0483	18·4506	18·5292
28	·8827	·8529	1·0584	·8988	·8498	74	19·6479	21·7984	18·9894	19·9509	20·1877
29	·8810	·8626	1·0837	·9052	·8437	75	20·7848	24·0134	22·3864	21·4661	21·8777
30	·8753	·8794	1·1059	·9107	·8376	76	21·8312	26·4844	26·2394	22·9963	23·5989
31	·8655	·9035	1·1252	·9154	·8314	77	22·7113	28·6170	29·4479	24·3088	25·0897
32	·8630	·9287	1·1480	·9503	·8302	78	23·4252	30·4112	32·0120	25·4036	26·3501
33	·8677	·9551	1·1742	1·0153	·8340	79	23·9730	31·8669	33·9315	26·2809	27·3800
34	·8798	·9827	1·2040	1·1106	·8429	80	24·3545	32·9841	35·2065	26·9405	28·1795
35	·8991	1·0114	1·2372	1·2360	·8567	81	24·5698	33·7629	35·8370	27·3825	28·7485
36	·9257	1·0414	1·2740	1·3916	·8756	82	24·8912	34·6970	36·3375	27·9052	29·4124
37	·9551	1·0819	1·3152	1·5018	·8970	83	25·3187	35·7864	36·7080	28·5086	30·1713
38	·9872	1·1330	1·3611	1·5664	·9210	84	25·8523	37·0310	36·9484	29·1927	31·0250
39	1·0221	1·1947	1·4114	1·5857	·9476	85	26·4920	38·4310	37·0588	29·9575	31·9737
40	1·0677	1·2669	1·4663	1·5594	·9767	86	27·2378	39·9863	37·0392	30·8030	33·0174
41	1·1002	1·3498	1·5258	1·4877	1·0083	87	27·5232	41·0552	37·0235	31·0985	33·7581
42	1·1398	1·4477	1·5901	1·4453	1·0512	88	27·3481	41·8378	37·0118	30·8440	34·1959
43	1·1786	1·5608	1·6593	1·4322	1·1053	89	26·7126	42·3340	37·0039	30·0394	34·3308
44	1·2166	1·6890	1·7335	1·4484	1·1707	90	25·6167	42·5438	37·0000	28·6849	34·1628
45	1·2537	1·8323	1·8125	1·4939	1·2472	91	24·0603	42·6673	37·0000	26·7804	33·6918
46	1·2900	1·9908	1·8964	1·5688	1·3350	92	22·0610	42·9661	37·0000	24·4216	33·6451
47	1·3417	2·1423	1·9954	1·6528	1·4397	93	19·6187	43·2402	37·0000	21·6085	34·0225
48	1·4089	2·2871	2·1095	1·7461	1·5612	94	16·7334	43·4896	37·0000	18·3411	34·8242
49	1·4915	2·4249	2·2388	1·8486	1·6996	95	13·4051	43·7143	37·0000	14·6194	36·0500
50	1·5896	2·5559	2·3831	1·9603	1·8548	96	9·6339	43·7143	37·0000	10·4434	37·7000
51	1·7031	2·6800	2·5426	2·0812	2·0269	97	6·6169	43·7143	37·0000	7·1026	39·0200
52	1·8335	2·8168	2·7144	2·2161	2·1950	98	4·3541	43·7143	37·0000	4·5970	40·0100
53	1·9808	2·9662	2·8985	2·3650	2·3592	99	2·0914	43·7143	37·0000	2·0914	41·0000
54	2·1450	3·1280	3·0949	2·5279	2·5194	100	2·0914	43·7143	37·0000	2·0914	41·0000
55	2·3260	3·3029	3·3036	2·7047	2·6756						

An examination of the Rates of Sickness as given for the Rural Districts will shew that it fluctuates up to the age of 32, and that from that age up to 87 there is a uniform and gradual increase. In the Town Districts the rate of Sickness will be found subject to a similar increase from the age of 27 upwards; and in the City Districts the rate increases throughout the whole range of the Table. A comparison will shew a higher rate of Sickness in the Town than in the Rural Districts, throughout the whole period of life. The rate of Sickness in the City Districts will also be found higher than in the Rural Districts, from 23 to 63 years of age; it then continues at a lower rate up to the age of 75, when it again rises, and continues higher till the end of life. In the City Districts, from the age of 24 to 44, the Sickness is also higher than in the Town Districts; but from 45 to 57 the rate in both Districts differs but little. After 57 years of age to the end of life, there is a much higher rate of Sickness in the Town than in the City Districts. The following Abstract of Table V will give a general view of the relative amount of Sickness in the various Districts.

Ages.	Average Sickness per Annum to each Person—expressed in Weeks.			
	Rural Districts.	Town Districts.	City Districts.	The Three Districts combined.
20	·8387	·8564	·5659	·8398
25	·8630	·8649	·9650	·8744
30	·8753	·8794	1·1059	·9107
35	·8991	1·0114	1·2372	1·2360
40	1·0677	1·2669	1·4663	1·5594
45	1·2537	1·8323	1·8125	1·4939
50	1·5896	2·5559	2·3831	1·9603
55	2·3260	3·3029	3·3036	2·7047
60	3·8531	4·9132	4·4973	4·1657
65	7·6305	9·1387	5·9019	7·7501
70	14·1949	15·4995	9·9610	14·0391
75	20·7848	24·0134	22·3864	21·4661
80	24·3545	32·9841	35·2065	26·9405

Sickness will be found to follow to some extent the same law with regard to the influence of Locality, that was observed to connect itself with Mortality; being least in the Rural Districts, and increasing in amount in the other Districts; but it will be observed that the relation of cause and effect generally supposed to exist between Sickness and Mortality is not here manifested—in fact, the highest ratio of Sickness is sometimes found associated with a favourable rate of Mortality. In order to shew, however, the merits of this hypothesis for the general results of the Three Districts, a Table is subjoined shewing the increase per cent. in the rate of Mortality in the Town and City Districts above the Rural, also the increased rate of Sickness in the same Districts at the corresponding ages.

Ages.	Increased Mortality per Cent. above the Rural Districts in the		Increased Sickness per Cent. above the Rural Districts in the		Ages.
	Town Districts.	City Districts.	Town Districts.	City Districts.	
20	27·6008	12·7200	2·1104	32·7650	20
30	5·4852	30·5204	0·4684	26·3338	30
40	20·4517	75·7842	18·6560	37·3419	40
50	35·5833	61·6666	60·7220	49·9182	50
60	51·5277	41·0185	27·5130	16·7200	60
70	43·2990	26·7248	9·1906	29·8191	70

Abundant evidence in addition to this is furnished out of the present materials illustrative of this point; for example, Labourers, although influenced by the most favourable rate of mortality, are found to be subject to as high an amount of Sickness as the general average; and so also are some other occupations, in which the rate of mortality is also favourable, found subject to a rate of sickness much above the average.

Again, the Sickness among the Sixteen Trades formerly referred to is less than the general average, although, as has been shewn, they experience a greater Mortality. Bakers also, at the early and middle periods of life, are less subject to Sickness than the general average, and among them there is likewise a higher Mortality. The class Butchers seem to experience a very high rate of Mortality, although not subject to above the average amount of Sickness. In applying the test of Mortality to various localities and employments there is no difficulty, but the case is very different in viewing Sickness as an index to the sanitary condition of any trade or of any locality. What constitutes Sickness in one case, is often a very different thing from that in another. The standard seems too indefinite and capricious; and although the results as obtained may be considered perfect for all the purposes of Friendly Societies, a careful inquiry will shew their vague nature for medical and other scientific purposes, unless carried further than the mere amount of Sickness, without regard to the circumstances under which it has taken place, and the causes producing it. Taking two occupations—Tailors and Clerks—which happen to be of readiest reference, they are found subject to a very high rate of Mortality; still they do not seem, particularly Clerks, to be subject to so much as the average amount of Sickness; and on consideration of the nature of those employments, it will immediately suggest itself, that the same trivial circumstances which would be sufficient to disable Sawyers, and also Colliers and Miners, would have little effect on those following quiet occupations. Sawyers, Colliers, and Miners are subject to accidents and various injuries which cannot be considered constitutional disease or sickness; yet it entitles them to relief from Benefit Societies, and they will of course be returned on the sick list. Tailors and Clerks are less subject to those accidents, and accordingly their Sickness is also less; the other classes, particularly Colliers and Miners, being much above the average.

But the most striking refutation of the theory, that Sickness and Mortality bear the relation to each other of cause and effect, will perhaps be derived from a comparison of the General Results of Mortality in Friendly Societies in England for all Districts combined, as given in Table F, with that for Scotland in Table M. The result of this comparison will be, that the rate of mortality in Scotland among the members of Friendly Societies is much higher than among the same class in England; and if the theory just recited were to hold good, there should also be found a greater amount of Sickness in Scotland; but an inspection of TABLE V will shew that such is not the case, and that instead of there being an increased ratio of Sickness, the ratio is actually below that in England. Nothing further need, therefore, be said on this part of the subject; but the argument may be rendered more obvious by an inspection of the following Abstract, in which it will be seen that while the excess of Mortality is uniformly against Scotland, the excess of Sickness is as constantly against England.

Age.	Mortality per Cent. in		Excess of Mortality in Scotland per Cent.	Average Sickness yearly in		Excess of Sickness in England per Cent.
	England.	Scotland.		England.	Scotland.	
30	·7563	·7926	4·7997	·9107	·8376	8·0268
40	·9386	1·0767	14·7134	1·5594	·9767	37·3670
50	1·4267	1·5830	10·9538	1·9603	1·8548	5·3818
60	2·5054	2·9096	16·1331	4·1657	3·9423	5·3628

The nature of the information on the Schedules relating to the Societies in Scotland would evidently satisfy many speculations as to the Cause, Duration, and Mortality of Sickness and Disease; but as it is proposed to give in this Paper a simple representation of the amount of Sickness only in the different Districts, all inquiries, however interesting and instructive, as to the ratio of Sickness to Mortality, under the various circumstances which present themselves of Employment and Disease, must for the present remain untouched.

The next part of the subject naturally arising in this Paper is, the Relation which the Average Amount of Sickness, as developed by this inquiry, bears to the amount of Sickness as hitherto shewn in other Sickness Tables.

The only Tables to which it is deemed necessary to make reference, are those contained in the Highland Society's Report for 1824, and the Tables given in the highly valuable Work by Mr. Ansell on Friendly Societies, and published in 1835 under the superintendence of the Society for the Diffusion of Useful Knowledge. The following will shew the relative amount of Sickness per annum to each person at given ages according to those Tables, and also according to the results of this inquiry.

Sickness per Annum to Each Person—expressed in Weeks.

Age.	Highland Society.	Ansell.	Three Districts Combined, Table V.	Age.	Highland Society.	Ansell.	Three Districts Combined, Table V.
21	·575	·780	·8453	46	1·032	1·411	1·5688
22	·576	·785	·8515	47	1·108	1·475	1·6528
23	·578	·791	·8585	48	1·186	1·544	1·7461
24	·581	·798	·8661	49	1·272	1·619	1·8486
25	·585	·806	·8744	50	1·361	1·701	1·9603
26	·590	·815	·8834	51	1·451	1·791	2·0812
27	·596	·825	·8915	52	1·541	1·890	2·2161
28	·603	·836	·8988	53	1·633	1·999	2·3650
29	·611	·848	·9052	54	1·726	2·120	2·5279
30	·621	·861	·9107	55	1·821	2·256	2·7047
31	·631	·876	·9154	56	1·918	2·410	2·8956
32	·641	·893	·9503	57	2·018	2·586	3·1371
33	·652	·912	1·0153	58	2·122	2·788	3·4293
34	·663	·933	1·1106	59	2.230	3·021	3.7722
35	·675	·956	1·2360	60	2·346	3·292	4·1657
36	·688	·981	1·3916	61	2·500	3·611	4·6099
37	·702	1·009	1·5018	62	2·736	3·991	5·1904
38	·718	1·040	1·5664	63	3·100	4·448	5·9073
39	·737	1·074	1·5857	64	3.700	5·001	6·7605
40	·758	1·111	1·5594	65	4·400	5·672	7·7501
41	·784	1·151	1·4877	66	5·400	6·486	8·8760
42	·814	1·195	1·4453	67	6·600	7·471	10·0679
43	·852	1·243	1·4322	68	7·900	8·659	11·3257
44	·902	1·295	1·4484	69	9·300	10·086	12·6494
45	·962	1·351	1·4939	70	10·701	11·793	14·0391

For the sake of a more convenient and general view of the relative merits of those different results, the following Abstract is given.

Age.	Annual Amount of Sickness to Each Person—Expressed in Weeks.				
	Highland Society.	Ansell.	Average of all Districts, Table V.	Excess per Cent. above Highland Society.	Excess per Cent. above Ansell.
20	·575	·776	·840	31·5476	7·6190
30	·621	·861	·911	31·8331	5.4884
40	·758	1·111	1·559	51·5070	28·7363
50	1·361	1·701	1·960	30·5612	13·2142
60	2·346	3·292	4·166	43 6869	20·9798
70	10·701	11·793	14·039	23·7766	23·0636

The remarkable increase in the amount of Sickness, as shewn by the present results, beyond the two other Tables, will no doubt appear very startling to those not intimately familiar with the condition of Friendly Societies throughout the country. The rate of Sickness as given in the Table of the Highland Society has been long and generally acknowledged to

be much below the actual average, and even so far back as 1825 it was thought unfavourably of by a Committee of the House of Commons. It is unnecessary to enter into the objections against the nature and source from which the data for the Highland Society's Table were obtained, as that subject has been amply discussed elsewhere. For some time after Mr. Ansell's work appeared, it was thought that contributions calculated according to the increased amount of Sickness shewn in his Tables would render Friendly Societies perfectly safe; but instances occur almost daily of Societies breaking down whose contributions approximate to those Tables; and recently the increased amount of Sickness has become so apparent to the members of some of the best regulated Societies, that Meetings have been held, and Reports of a very clear and apposite kind published, pointing to the increased amount of Sickness as the cause of their falling condition. A knowledge of circumstances of this kind first led to the present inquiry, the original object of which was simply to answer the question, Whether Friendly Societies actually were subject to a higher rate of Sickness.

Mr. Ansell's data had reference to the five years 1823–1827; and it is difficult to account for the difference between his Tables and the present results, unless it be considered that the imperfect manner in which the affairs of Friendly Societies at that period were managed, did not allow of so accurate information being then obtained as now, when required by Act of Parliament to make quinquennial returns. In Scotland, at the time even of collecting the data for this inquiry, it was found that quadruple the Societies would have filled up schedules in competition for the prizes offered, but were prevented doing so by the incomplete system in which their books were kept. It is not improbable that the difference of the two classes of results may be partially accounted for by the smallness of the numbers over which his observations extended, as in the aggregate they amounted to 24323 years of life only, or about 5000 persons for a period of five years. If this fact is considered, and at the same time the irregularities which peculiarity of employment and other circumstances have been shewn to produce, it will not be difficult to account for the discrepancy. If the nature of Mr. Ansell's Treatise had required an enumeration of these features, it would have been interesting to have traced the cause.

It is not believed that the mere fact of small numbers would, of itself, be sufficient to account for the difference, without at the same time a peculiarity in the combination of the employments of the persons composing those numbers; for not the least remarkable feature which has appeared in the present inquiry is, the uniformity of the results as to sickness, with even smaller numbers than those included in Mr. Ansell's statement, when all the facts recorded were under similar circumstances as to locality and employment.

In order to give a still further and more comprehensive view of the several Tables over periods of years, the following arrangement may be useful.

Comparative Amount of Sickness in various Periods of Years according to the Sickness Tables of the Highland Society, the Tables by Mr. Ansell, and the Results of this Inquiry.

From Age	Amount of Sickness in each period of Years, expressed in Weeks.				
	Highland Society.	Ansell.	Average for the Three Districts.	Excess perCent. over Highland Society.	Excess per Cent. over Ansell.
20 — 30	5·870	8·060	8·7145	32·641	7·510
30 — 40	6·728	9·535	12·1838	44·778	21·740
40 — 50	9·670	13·395	15·6832	38·341	14·590
50 — 60	17·827	22·562	27·0894	34·192	16·712
60 — 70	47·982	58·717	77·3029	37·929	24·042
70 — 80	.....	.....	205·3562	.....	.....
20 — 40	12·598	17·595	20·8983	39·718	15·806
30 — 50	16·398	22·930	27·8670	41·156	17·716
40 — 60	27·491	35·957	42·7726	35·727	15·934
50 — 70	65·803	81·279	104·3923	36·965	22·140
60 — 80	.....	.....	282·6591	.....	.....
20 — 50	22·268	30·990	36·5851	39·133	15·293
30 — 60	34·219	45·492	54·9564	37·734	17·221
40 — 70	75·473	94·674	120·0755	37·145	21·154
50 — 80	.....	.....	309·7485	.....	.....
20 — 60	40·089	53·552	63·6709	37·037	15·892
30 — 70	82·201	104·209	132·2593	37·848	21·208
40 — 80	.....	.....	325·4317	.....	.....
20 — 70	88·071	112·269	140·9738	37·526	20·361
30 — 80	.....	.....	337·6155	.....	.....
20 — 80	.....	.....	346·3300	.....	.....

An inspection of the fourth and fifth columns of the above Table will afford the most conclusive evidence of the increased ratio of Sickness above that set forth in previous Tables. To those interested in the progress of Friendly Societies the results are highly important, as they will demonstrate the impossibility of permanence in those institutions on their present foundations. Considering the immense number of those Societies which have broken down, it is lamentable to think that so little should have been done to ascertain the real nature and extent of the risks to which they are subject. It is still more remarkable that so many legislative enactments should have occupied the attention of the

Government of the country from time to time, and that Committees also of the House of Commons should have had the condition of those Societies for several years under consideration, without any practical measure being carried out for collecting and arranging data in a proper shape to point out the true character of the liabilities to which they are subject. In fact, the stimulus given to the formation of those Societies by some recent Acts of Parliament should be regarded as an evil rather than as a benefit to the working classes. An immense number of Societies were formed in a very short period, and their contributions regulated by the most delusive and inadequate data, so that at the present time very few are to be found calculated to survive many years. Under a scientific and amply developed system, those Societies would be calculated, in a few years, to completely remove the cause of nearly all that poverty, distress and misery which haunt our manufacturing towns, and fill our workhouses with the working classes of the country; but owing to the imperfect and unstable foundation on which they are at present built, instead of being a help and a support to a poor man, they involve him in those difficulties for which he might otherwise have provided. On becoming a member of such a Society, he reasonably looks forward to it as a support for his declining years, and a protection during periods of sickness and disease; but ultimately, at the very time when assistance is required, he discovers that the Society has been formed on a ruinous plan, that the increasing years and infirmities of its members have absorbed all its funds, and that those surviving must be thrown destitute on the parish as a public charity. It is thus, by the most ill conceived of all proceedings, the legislation of the Government has hitherto tended. Every facility and encouragement are given to the formation of Societies, without any help or information for their management or guidance. The ship is cast upon the waves without a rudder or a compass, and the safety of the vessel left to accident and chance.

As stated, a Committee of the House of Commons reported, in 1825, unfavourably of the Table of Sickness furnished in the preceding year by the Highland Society; still no other data were supplied on which any more confidence could be placed: the consequence was, that Societies were formed, and continued to be managed, on calculations resulting from the same data; and, even up till the present time, thousands of those Societies are conducted either on those terms, or terms still less adequate to carry out the purposes contemplated.

An inspection of Column 4 of the preceding Table will show that, in the decennial periods of life for 20–70, the Friendly Societies in England and Wales experience an excess of sickness of from 32 to 44 per cent. above that indicated in the Table of the Highland Society, or an average increase of sickness over the whole of that period of fifty years of 37.526 per cent.; or, in other words, Friendly Societies actually experience about 141 weeks' sickness in that fifty years, while the Highland Society Table would lead them to expect eighty-eight weeks' only.

The ruin of any Society, under such conditions, is inevitable. There are many other errors in the Rules of Friendly Societies, connected with the various benefits which they hold out, calculated to ruin their schemes; but if it were necessary here to cite instances in which Societies have suffered from the simple feature of excessive sickness, abundant instances could be pointed out; but the internal evidence contained in this Paper, of the actual rate of sickness experienced by Societies in the aggregate, must also prove that individual societies have been sufferers. In illustration of this point, it is impossible to avoid quoting a passage from a very able Report, dated 8th of February, 1841, submitted to the Edinburgh Compositors' Society, by a Committee appointed to revise the laws. They state, in their Report, that the contributions and benefits of the Society were regulated by the data of the Highland Society ; and, in order to discover whether the experience of the Society has harmonized with the original data from which their calculations resulted, an investigation of the actual sickness in the Society was made, of which the following is an Abstract:—

Age.	Number of Members.	Actual Sickness in the Society.		Amount of Sickness Expected by the Highland Society Tables.		Excess of Actual Sickness.	
		Weeks.	Days.	Weeks.	Days.	Weeks.	Days.
20 — 30	732	979	1	417	0	562	1
30 — 40	580	863	5	398	1	465	4
40 — 50	126	191	5	129	3	62	2
50 — 60	11	12	2	20	4	8	2
Total ...	1449	2047	1	965	2	1081	5

It will thus be seen that the actual Sickness experienced by this Society has exceeded that contemplated by the Highland Society Tables by no less an amount than 112 per cent.

The following gives the amount of Sickness as experienced by this Society, and also according to the results of various Tables.

	Weeks.	Days.	Excess of Sickness in Compositors' Society. Weeks.	Days.
Amount of Sickness in Compositors' Society . .	2047	1	..	..
Ditto, Highland Society Tables	965	2	1081	5
Ditto, Ansell's Table	1357	0	690	1
Results as given in this Paper, City Districts, Table V	1748	0	299	1
Results as developed in this investigation. { Printers	2033	0	47	1
{ Colliers and Miners . .	2146	0	98	5 less Sickness in Compositors' Society than among Colliers and Miners.

It will thus appear, that while there was in the Society an excess of 112 per cent. above the Highland Society's Table, and also an excess of 51 per cent. above Mr. Ansell's Table, there is an excess of only 17 per cent. above the results obtained in the present inquiry, for the average of all trades in the City Districts, and of 2 per cent. above the general class Printers, which includes both Compositors and Pressmen; but there is at the same time also actually less sickness than among Colliers and Miners by nearly 5 per cent.

It has been shewn that particular Trades and Employments are subject to different degrees of Sickness and Mortality, and the importance of this element in considering the Health of Towns, and the influence of Locality on the Duration of Life, has already been pointed out; but in viewing the condition of Friendly Societies, the necessity of considering the peculiar effect of certain Trades and Occupations must appear to be of vital importance. A most remarkable disparity exists between the Rates of Sickness prevalent in different places and in different employments, and Societies may run the greatest hazard by incautiously adopting each other's Regulations or Tables; for so great is the distinction which obtains between the liabilities incurred from Members of different Trades, that what would be sufficiently safe for one Society might completely ruin another. It may seem to some that the excessive Amount of Sickness experienced by the Compositors' Society may be accounted for by the fluctuation in small numbers, but on reference to the Report itself such will not be found to be the case. The facts extend over a term of sixteen years, and the results for the various periods are pretty uniform, and cannot be looked upon as the result of any accident, but must be regarded as a distinctive and proper feature of that trade to which the Members of the Society belong.

In calculating Tables for the guidance of such a Society, it would evidently not be safe to assume the results for the general average of the Country or a given District as a sufficient basis to proceed upon; for, allowing such to be the case, and adopting even the present results as a standard of calculation, there would still be 17 per cent. of the Sickness in the above Society unprovided for. As remarked in respect of the Rates of Mortality in different Trades and Occupations, so also may it be said of Sickness, the present inquiry cannot therefore be regarded as complete till the results for the various employments are published.

Other Societies in Edinburgh, it will be seen from a following quotation from the Report in question, have also experienced an increased amount of Sickness beyond the rates of the Highland Society's Table, although the Sickness in those Societies has not equalled in amount that of the Compositors' Society. It is stated that the Sickness in those Societies amounted "on an average to no less than 87 per cent. more than the Highland Society's rate." Considering this statement, from the correctness of detail in other parts of the same Report, to be correct, it seems to be a very remarkable coincidence, that in the City

Districts, being that with which those Societies should be brought into comparison, there is, according to the results of this investigation, at the same term of life also exactly 87 per cent. more Sickness than given in the Highland Society's Table. From 20 to 60 years of age, according to the Highland Society's Table, (see page 98,) there is forty weeks' Sickness to each person; but according to the City Districts, Table V, there is seventy-five weeks' Sickness, or 87 per cent. more than given in the Highland Society's Table.

The practical advantage of thus recognising particular districts and occupations is obvious; for had either of the preceding questions been tested by the results for the general average, no satisfactory solution could have been offered. Hence the reason why some Friendly Societies go on prospering, while others, under apparently the same management and scheme, survive but for a short term of years, to ultimately involve their Members, when most in need of support, in ruin. The following Extract from the Report of the Committee in question is important:—

"The average annual sickness to an individual is as follows:—

	Compositors' Society.			Highland Society.		
	Weeks.	Days.	Hours.	Weeks.	Days.	Hours.
From 20 to 30 years of age, . .	1	2	1	0	4	3
„ 30 to 40	1	2	22	0	4	19
„ 40 to 50	1	3	3	1	0	4
„ 50 to 60	1	0	17	1	6	3

"From a comparison of these two rates, it will be seen that the Sickness experienced by this Society has been more than double that given by the Highland Society. Since ascertaining this result, the Committee have made various inquiries in order to ascertain how far this increase corresponded with the experience of other Societies established on similar principles; and they have to report as the result of these inquiries, that in Heriot's Benefit Society, the School of Arts, the Goldsmiths' Equitable, the Journeymen Goldsmiths' and in the Cabinet and Chairmakers' Societies, a very great increase had also been experienced, amounting, on an average of these Societies, to no less than 87 per cent. more than the Highland Society's rate. Great, however, as this increase appears, it is easy to be accounted for when the state of Societies is considered during the period embraced by the Highland Society's inquiry. It is well known that up till the period of the publication of the Highland Society's Report, Societies generally partook very much of a charitable character, no member being entitled to benefits unless he was in indigent circumstances. Now, when it is considered that the Highland Society's rate of sickness was deduced from the amount of sickness experienced by the 79 Societies above mentioned, during a period

when they were formed upon this charitable principle, it is not to be wondered at that now, when they are established upon strictly insurance principles, and when, in consequence, each member claims to the utmost extent of the benefits, the sickness should be found to be so much greater than was at first supposed. This, the Committee conceive, is quite sufficient to account for the great disparity between the rate of sickness given by the Highland Society, and that now found to occur among Societies."

The preceding comparisons did not extend beyond 60 years of age; but, as will appear from subsequent illustrations to be given in this Paper, the claims to be made by Members after passing their sixtieth year become generally so alarming as to be the usual means of awakening Societies to the danger of their position. For example, although in the Compositors' Society all the Members were under 60 years of age, still there was a large amount of what is called Permanent Sickness. At page 6 of the Report in question, it will be seen that of the Members actually sick,

91·0	per cent. had	7½	weeks' sickness each;
3·5	„	69	„
And 5·5	„	246	„

It will thus appear, that the Amount of Sickness among 5·5 per cent. of the Members was actually more than double that experienced by 91 per cent. of another class of the same Society. When the subject of Permanent Sickness is brought forward, its relation to age, its effect on the funds of a Society, and the methods by which the future liabilities of a Society may thereby be determined, will be amply discussed.

Having entered so fully into the characteristic features of the Highland Society Table, in relation to the results of this inquiry, a simple inspection of the Table at page 98 will be sufficient to shew to what extent Mr. Ansell's Table is liable to the same objections. At the decennial periods of life from 30–70, it will be seen that there is an excess of Sickness in the Friendly Societies in England and Wales over Mr. Ansell's Table, varying from 15 to 24 per cent., or a mean difference over the whole of that period of forty years of 21·208 per cent. This excess of Sickness, as well as all the other results in page 98, are derived from making Table V the standard of comparison; but if Mr. Ansell's Table were taken as the standard of comparison, the deficiency in amount of Sickness over that period of years would be 29 instead of 21 per cent., and at ages 60–70 the deficiency would be 31 instead of 24 per cent., as given at page 98, or a deficiency of nearly one-third. But in regarding that Table as a general guide for Friendly Societies, its inadequacy for many cases will instantly appear by making it bear on the results of Table V for the City Districts, in which, as already stated,

the amount of Sickness from 21–60 years of age is seventy-five weeks, being an excess over Mr. Ansell's Table, for that period of life, of no less than 41 per cent. The greatest care and discrimination should therefore be exercised, in established Friendly Societies, not to adopt general results for the guidance of particular classes. The laws of Sickness and Mortality are under peculiar modifications in each class, and must be developed before any safe practical conclusions can be arrived at, deserving of public confidence.

The following are the results of a combination of the elementary data of some interest, in a form not hitherto attempted, and from which some useful conclusions may be drawn. In the preceding Tables the Rate of Mortality has invariably been regarded in relation to every member of the Society or Societies, at the given ages; but in Column 1 of the following Table will be found the results of a different combination. All the members at every year of life, or rather all the members of exactly the same age, being placed into one group, it was then observed how many of these had actually experienced Sickness during the course of that year of life. And these being abstracted from the total number of members of the same age, column 1 was deduced, expressing for quinquennial periods of life the per-centage of members that are actually sick in the course of one year; for example, out of every hundred members aged 31–35 in a Society, twenty-one will be on the Sick List during some part of the year; but of the same number of members aged 61–65, at least thirty-five members would be sick during some period or other of the year.

An inspection of Column 1 will shew, that from the younger ages up to the period 31–35, the ratio or chance for any given member to be sick diminishes; but that from that period of life upwards, the tendency for any given member to be sick increases in a uniform and regular series. No Table of this kind has hitherto existed; and it is believed, that in addition to the more general purposes of Vital Statistics, it will be practically useful to Benefit Societies, in enabling them to determine whether the numbers on their Sick List be greater or less than the average. Table V will afford a means to determine whether the total amount of sickness in a Society be greater than the average; but the present Table simply points out the proportion of members to be expected on the Sick List, and is perhaps more important than the other, as a test to the means of selection adopted for the admission of Members.

Column 2 is simply a modification of Column 1, and needs no explanation further than to state, that it will afford a ready means of testing the relation of the sick

to the non-sick members in any one year, when placed in separate groups, as is generally done in Benefit Societies.

Age,	Per-Centage of Members Sick during each Year.	Ratio of Sick Members to every 100 not Sick in every Year.	Mortality per Cent. among those Actually Sick.	Sickness per Annum among those Actually Sick.	Total Amount of Sickness to each Death.	Age.
11 — 15	21·9565	28·1337	·9901	4·1231	416·4290	11 — 15
16 — 20	22·0743	28·3273	2·8571	3·5887	125·6032	16 — 20
21 — 25	22·0386	28·2686	3·0539	3·8518	126·1271	21 — 25
26 — 30	21·6997	27·7134	3·3271	4·1921	125·9977	26 — 30
31 — 35	21·0147	26·6058	3·7592	4·3585	115·9411	31 — 35
36 — 40	21·5471	27·4650	4·0686	4·9463	121·5732	36 — 40
41 — 45	22·9858	29·8463	4·5306	5·9418	131·1468	41 — 45
46 — 50	24·6042	32·6333	5·1657	6·8556	132·7123	46 — 50
51 — 55	27·6422	38·2022	6·2401	8·5104	136·3839	51 — 55
56 — 60	30·2424	43·3535	7·2732	10·9261	150·2235	56 — 60
61 — 65	35·5676	55·2015	8·6163	15·1975	176·3808	61 — 65
66 — 70	46·8493	88·1443	9·6004	24·2217	252·2988	66 — 70
71 — 75	58·3750	140·2400	12·1306	32·6275	268·9679	71 — 75
76 — 80	73·5916	278·6667	11·3636	36·2367	318·8876	76 — 80
81 — 85	74·4624	291·5790	18·4116	37·7633	205·1064	81 — 85
86 — 90	79·4872	387·5000	17·2043	410 829	238·7943	86 — 90
91 — 95	50·0000	100·0000	.....	39·2450	.....	91 — 95
96 —100	.....	.....	.....	.....	.....	96 —100

In Tables E, F, and C, &c., the rate of mortality was given for the general population of Friendly Societies; but in the third column of the preceding Table will be found the mortality per cent. among those persons actually sick. The mortality among the population generally has been shewn to increase with age; so also does the mortality among those persons actually sick increase with age.

In the quinquennial period of life 21–25, the mortality among those sick is 3·0539 per cent.; but in the advanced period of life 66–70, the mortality is increased to 9·6004 per cent., or more than three times that of the other period. An inspection of this column will shew that there is a uniform and gradual rate of increase of mortality.

Tables of this kind are calculated to throw important light on the subject of Vital Statistics. A chronological series would point out any change or modification that may have taken place in the intensity and severity of disease. By the aid of the information given in column 3, premiums may easily be determined for the assurance of lives while actually sick; but as the results in that column do not distinguish Sickness under particular diseases, a knowledge of the disease under which the patient might be suffering would be of no assistance to parties undertaking the risk: but if particular diseases, with the Sickness and Mortality under each, were given in separate classes,

then the results would apply to given diseases, in the same manner in which the above results will apply to Sickness in general, irrespective of disease. An application of columns 1st and 3rd will afford the means of measuring the exact liabilities of a Friendly Society; and if the same means were available to an Assurance Company of ascertaining the ratio of its members sick, the principles of determining the liabilities in those Companies would undergo an important change.

Suppose that in any particular Society containing 3647 Members, equally distributed over the ten quinquennial terms of life from 20 to 70 years of age, one thousand of those should be found on the Sick List in the course of a year, and of one thousand persons found sick, fifty-six deaths would take place in that year; but if in the actual result the balance of those numbers was in any way disturbed, that circumstance would tend to shew whether the selection of lives in the Society was of a favourable or unfavourable character.

The results in column 3 were obtained by direct observation; but it is evident that if m is made to represent the rate of mortality per cent. as given in Tables E and F, and a the results in column 1, then

$$\frac{m \times 100}{a} = \text{column 3.}$$

It is obvious that in applying the results in this Table to any practical purpose, independent calculations must be made for each term of years, otherwise errors of the same nature to those pointed out at page 41 would affect the result.

Column 4th of the same Table will be found to represent the amount of sickness per annum among those actually sick. From the age of 15 upwards, the amount of sickness will be found to increase in a regular and uninterrupted series. At the term of life 21–25, there is 3·8518 weeks' sickness in a year to each person, but at the term 66–70 there is 24·2217 weeks' to each person actually sick.

Without any further inquiry on this point, the manner in which it will bear on what is called Permanent Sickness in Friendly Societies is obvious. It will thus be seen, that not only has advanced years a greater liability to sickness, but that, once on the Sick List, its duration receives a most remarkable increase. It will also be further seen, that at the two terms of life 21–25 and 66–70, the relative chances of being sick are in the ratio of 220 to 468, while the mortality at the same terms of life is in the ratio of 31 to 96 among those actually sick; and that the amount of sickness to those persons at the respective ages, shews the remarkable disparity of 39 to 242.

The cares, anxiety, and suffering with which the decline of life is thus beset, appear to form a most striking contrast to the improvident carelessness with which

in youth any provision for those calamities is regarded. "If any man will not work, neither shall he eat;" and as "the time cometh when no man can work," it is in the summer of life that abundant provision must be made for the vicissitudes of that winter which incapacitates for labour; but how mortifying must be the disappointment which falls on the hopes of those patient contributors to Friendly Societies, who, after thirty or forty years' experience, find in the decline of life, when thrown by their infirmities on those Societies for support, no brighter prospect than the severe and harassing privations of pauperism, or the consolations of the workhouse.

The results in column 4 may be obtained in the same manner as that just described for column 3, viz.:—Let s represent the Average Sickness per Annum, as given in Tables E and V, and a the results in column 1; then

$$\frac{s \times 100}{a} = \text{column 4.}$$

It must be kept in view, that the results in this column, as well as those given in the whole of the same Table, will be much influenced by local circumstances and peculiarity of employment, and that it is not to be thought that they can be applied with safety to all Societies promiscuously. Considerable experience and discrimination will always be required, to determine on the due application of many of the most important practical results here produced.

Perhaps the most curious and interesting part of the preceding Table is column 5, as it presents some remarkable and novel features connected with Vital Statistics. A careful survey of the figures presented will shew, that although, as age advances, the human constitution has a greater tendency to decay, and greater liability to Sickness, still it presents the apparent anomaly of having in advanced life a greater power of enduring Sickness than in younger life; and yet, although there is less power to resist the approach of disease, there is a higher capability of sustaining its insidious and destroying agency.

At the period of life 31–35, it will be seen that for every 116 weeks of sickness there is one death; but at the term of life 66–70, there is only one death for 252 weeks of sickness; or in other words, a greater amount of Sickness is required to destroy life at advanced ages than at younger ages.

This peculiar feature, which seems to have been unexpected by those giving attention to such subjects, may be explained in several ways. Many of the diseases prevalent in younger life disappear in after years; and, in passing from the diseases peculiar to youth, other diseases ensue, which, although not so acute in their nature, are yet fatal in their results; and thus the change from the acute to the more chronic form of

disease will impart increased duration, but not severity, to the sick-list of a Society. Again, many fatal diseases of youth, such as Consumption and other Diseases of the Chest, do not to any great extent incapacitate from labour; and in those diseases the mortality may be high, while the amount of sickness is small.

Nothing like a proper enumeration of all the practical applications of the preceding Table is here contemplated; but it may not be out of place to refer to a few of the more obvious uses to which it may be applied. In Friendly Societies, a correct record of the amount of sickness among the members will afford a means of predicting the number of deaths to be looked forward to, as well as the class of members among which such deaths are most to be expected. Investigations into the affairs of a Society will also be much aided by a skilful survey of the relative amount of sickness to the deaths among the members. Provided that, over a sufficiently long period, an unusually large amount of sickness was found to prevail in relation to the number of deaths, it might be safely inferred that some peculiar element affected the results; but if both sickness and mortality should show a marked augmentation beyond the calculated numbers, then such a feature might be regarded as evidence of an inferior condition of health among the members of that Society. For the more important purposes of Medical Science, the results in column 5 are easily available. Perhaps no simpler numerical test could be offered of the efficiency of particular modes of treatment; but to apply the results here given with much success, the figures should have been classified according to the Sickness and Mortality of particular diseases. A portion of the elementary data will admit of such a classification; and it is intended to publish the results on some future occasion.

Suppose a Medical Practitioner to have within the circle of his patients one thousand persons, whose ages vary from 21 to 70 years, and equally spread over that term of life; according to the results here given, he ought to expect 274 of them to be on his Sick List during the course of a year—that they would experience 2430 weeks' sickness in the aggregate—and that there would be about sixteen deaths out of that number in the same time; and presuming that he were to visit each patient every alternate day, it would produce 8505 visits in the course of a year, or about 23 visits daily. Societies and many other public bodies adopt a practice of paying an annual sum for medical attendance and advice; and it will thus be seen that means are available by which to calculate the probable amount of labour and time that may be required for the discharge of such engagements.

It may at this place be again stated, that in applying the preceding results to individual classes, or in a few instances only, it should not be expected that they will in every case be confirmed. Nothing short of a refined classification is calculated to meet the peculiar aspect of all the cases presenting themselves. A review of Table V will

shew the wide distinction which prevails between the ratio of Sickness in the Rural, Town, and City Districts; and in particular trades or occupations the sickness sometimes is double in amount that in other employments. In Sickness therefore, as well as in Mortality, it is obvious that general results can be but of little practical value. Suppose it were attempted to conduct Societies in Liverpool, or any other large City in England, on the same terms that would be adequate for Societies in the Rural Districts of Kent and Essex—it is manifest that they could not be of long duration.

Here it may be also well to state, that if in any public inquiry it should be attempted to ascribe the increased amount of sickness in the Town Districts to the less healthy nature of the districts, or their peculiar local influence on health, the conclusion would certainly be fallacious. Precisely similar arguments to those made use of in reference to the Mortality of those Districts, will explain the differences in the ratio of Sickness in the same places; and it is therefore to be inferred, that whatever sanitary regulations may be carried out for promoting the health of Towns, the wide distinction between the rates of Sickness and Mortality in particular districts will still not disappear. The cause of that difference is beyond the reach of any sanitary measure; and unless a change were to take place in the character and machinery of the manufactures of a town, by which the workmen would be habituated to less restrained but more natural and complete physical exercises, no improvement in the state of health is to be looked for.

The evils, so far as relates to health, represented to exist by some writers to so frightful an extent, and to connect themselves with inferior sewerage, filthy streets, and ill-planned houses, are certainly overstated by them. The data brought forward have generally been of the most indefinite and insufficient nature; and when, in connection with this, the erroneous methods employed, and the promiscuous manner in which their figures are generally combined, are kept in view, it must seem surprising that the thinking and intelligent portion of the community should have given their opinions any credence, or believed their conclusions entitled to so much weight.

Perhaps no statistical facts are better established than the duration of life among the middle and upper classes of this country; and if the data brought forward in this Paper be received as of sufficient merit to represent the duration of life among the working classes, it will then appear clear that any important change to be hoped for in the value of life in the Town Districts, must be effected through other means than sanitary regulations.

Those persons purchasing Government Annuities, and having dealings with Assurance Companies, are certainly beyond the reach of any improvements to be introduced by local regulations; and if cleanliness of habit, comfort of dwellings, and fresh air, be of themselves powerful elements in raising the standard of life, their influence should be felt among that class of persons. But what are the actual results?

The poor workmen inhabiting the miserable streets of our large towns, and inhaling their supposed noxious vapours, are actually longer lived than the affluent and upper classes, whose easy circumstances enable them to inhabit comparatively the palaces of the kingdom.

It is evident, from the great disparity in the value of life among different classes of workmen, whose conditions as to whatever is within the scope of public sanitary measures are the same, that other elements must exist having a powerful influence on the Duration of Life. It would further appear, by viewing the various classes of society more in connexion with the physical exercises to which they are habituated, than in connection with their moral position and rank in society, and consequently with their sanitary condition, that a better clue will be found to the differences in the Duration of Life. It is not to be expected that any arrangements whatever as to the drainage and planning of streets are likely to add to the longevity of a Tailor; but if it were possible to give his frame the physical exercises of a Ploughman, 20 per cent would be added to the duration of his life. Neither is it to be thought that the Plumber Painter and Glazier is to be relieved from the poison of the metallic emanations to which he is subject; nor that the Clerk can inhale the fresh air, and indulge in those exercises necessary to develope his physical constitution, while he follows the drudgeries of the counting-house. It is an aggregation of these, and other employments similarly conditioned, which make up the excessive mortality of our large towns; and since it has been shewn in the preceding pages, that this class of lives is also less healthy even in the Country Districts, and that the Town Populations are chiefly made up of persons following such occupations, the legitimate result to be expected is a shorter Duration of Life in Towns, independent of any local influence on health. If improvements and changes are to be effected in the sanitary regulations of our large Towns and Cities, let them at once be carried out—not upon the necessity of such municipal innovations to avert a pestilential havoc in human life—but on the true merits of the question—the comforts, conveniences, and elevation of taste and moral purity, thence arising.

RATES AND CONTRIBUTIONS OF FRIENDLY SOCIETIES.

The influence of the preceding results on the Rates and Contributions of Friendly Societies, is perhaps that which generally most concerns the members of those institutions, and it is proposed to add a few remarks bearing on this subject.

The first point to which attention will be directed is the Table at page 112, being the Values of Annuities, according to the Rates of Mortality, as developed in this inquiry, for Friendly Societies in the Rural, Town, and City Districts of England and Wales—for the average of these Districts combined—and also for Friendly Societies in Scotland.

The rate of Interest assumed in the following calculations is 3 per cent. per annum. In almost every other calculation extant for the purposes of Friendly Societies, a higher rate of interest has been adopted; but a careful investigation of the returns on this point, as given in the Schedules referred to at page 14 of this Paper, has shewn that in practice a higher rate of Interest is not realised by Societies.

The Commissioners for the Reduction of the National Debt have hitherto allowed Friendly Societies £3 16*s.* 0½*d.* per cent.; but even in the cases where this mode of investment has been taken advantage of, the difficulty of collecting all the funds at the moment they fall due, and of immediately employing them in the Government Stock, together with the comparatively large balance to the whole amount of the Societies' funds usually kept in hand to meet approaching liabilities, render it difficult to make much beyond 3 per cent. It is intended on another occasion to publish an account of the Money Transactions of those Societies; this and some other points of interest will then be more fully entered on.

The distinguishing features of the Rates of Mortality in the respective Districts, will of course develope themselves also in the same order or relation in the value of

[Annuities

Value of Annuities—Three per Cent.—Friendly Societies—Males.

Ages.	ENGLAND AND WALES.				SCOTLAND.	Ages.	ENGLAND AND WALES.				SCOTLAND.
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts
10	24·61632	24·27400	23·43143	24·35763	24·10883	56	13·31464	11·50235	11·66400	12·72113	12·51643
11	24·41047	24·07109	23·23032	24·15702	23·89434	57	12·95600	11·15426	11·30160	12·37084	12·17706
12	24·20063	23·86153	23·02250	23·94400	23·67276	58	12·59386	10·81044	10·93138	12·01822	11·84246
13	23·98917	23·64750	22·80943	23·72818	23·44805	59	12·22800	10·46922	10·55836	11·66283	11·51303
14	23·78095	23·43160	22·59255	23·51365	23·22400	60	11·85797	10·12786	10·18722	11·27757	11·18877
15	23·58105	23·21610	22·37367	23·30430	23·00442	61	11·48326	9·78460	9·82249	10·94181	10·86980
16	23·39455	23·00345	22·15454	23·10414	22·79300	62	11·10358	9·43712	9·46849	10·57626	10·55610
17	23·22640	22·79635	21·93658	22·91737	22·59383	63	10·72266	9·08728	9·12371	10·20975	10·24548
18	23·07225	22·59175	21·72235	22·74025	22·40412	64	10·34375	8·73662	8·78649	9·84452	9·93576
19	22·92705	22·38755	21·50680	22·56903	22·22109	65	9·97031	8·38614	8·45537	9·48291	9·62477
20	22·78605	22·18086	21·29054	22·39981	22·04167	66	9·60504	8·03702	8·12865	9·12712	9·30987
21	22·64448	21·96915	21·07148	22·22877	21·86338	67	9·25086	7·67621	7·80451	8·77879	8·98874
22	22·49689	21·74986	20·84833	22·05200	21·68318	68	8·90874	7·33835	7·48318	8·44034	8·66475
23	22·34304	21·52440	20·62022	21·86972	21·49955	69	8·57973	7·01904	7·16481	8·11400	8·34066
24	22·18292	21·29318	20·38789	21·63188	21·31145	70	8·26474	6·72612	6·84949	7·80205	8·01955
25	22·01579	21·05800	20·15300	21·48840	21·11751	71	7·96482	6·46778	6·53675	7·50654	7·70359
26	21·84136	20·81944	19·96316	21·28940	20·91630	72	7·68100	6·25298	6·22603	7·22975	7·39504
27	21·65960	20·57913	19·73007	21·03658	20·70658	73	7·40930	6·06875	5·91766	6·96633	7·08770
28	21·47000	20·33647	19·49647	20·87542	20·48945	74	7·14587	5·90191	5·61182	6·71128	6·77363
29	21·27267	20·09112	19·26054	20·66028	20·26557	75	6·88702	5·73900	5·30768	6·45931	6·44582
30	21·06763	19·84248	19·02036	20·48675	20·05456	76	6·62847	5·56533	5·00499	6·20508	6·09695
31	20·85509	19·59018	18·77441	20·21330	19·80200	77	6·36606	5·36540	4·70212	5·94296	5·71922
32	20·63443	19·33360	18·52500	19·98129	19·56424	78	6·10648	5·14290	4·40298	5·67803	5·33261
33	20·40640	19·07210	18·27270	19·74337	19·32340	79	5·85586	4·90115	4·11130	5·41504	4·95516
34	20·17068	18·80480	18·01850	19·49931	19·07981	80	5·62034	4·64316	3·82960	5·15847	4·60254
35	19·92773	18·53330	17·76316	19·24911	18·83406	81	5·40678	4·37100	3·56015	4·91444	4·29019
36	19·67773	18·25237	17·50736	18·99251	18·58630	82	5·21980	4·08611	3·30160	4·69007	4·03404
37	19·42066	17·96322	17·24837	18·72926	18·33715	83	5·04401	3·79485	3·06014	4·46145	3·81818
38	19·15621	17·66640	16·98677	18·45953	18·08450	84	4·86291	3·50268	2·83225	4·23505	3·62747
39	18·88434	17·36206	16·72339	18·18351	17·82613	85	4·65920	3·21398	2·61777	3·99517	3·44665
40	18·60452	17·01150	16·45861	17·90117	17·56000	86	4·41348	2·93159	2·41629	3·73033	3·25875
41	18·31665	16·73244	16·19333	17·61300	17·28364	87	4·10858	2·65510	2·22636	3·42713	3·04495
42	18·02014	16·40755	15·92806	17·31871	16·99946	88	3·76105	2·39396	2·04977	3·10549	2·81520
43	17·71582	16·07676	15·66103	17·01872	16·70175	89	3·39248	2·15258	1·88657	2·78158	2·57870
44	17·40402	15·74122	15·35518	16·71312	16·39787	90	3·02089	1·93288	1·73900	2·46913	2·34280
45	17·08533	15·40168	15·11524	16·40208	16·09068	91	2·65479	1·74300	1·60812	2·17900	2·11326
46	16·76030	15·05846	14·83307	16·08555	15·78305	92	2·30650	1·59387	1·50023	1·92234	1·89662
47	16·42930	14·78087	14·54220	15·76346	15·47786	93	1·97634	1·47303	1·40692	1·69776	1·69062
48	16·09331	14·36475	14·24400	15·43682	15·17233	94	1·66030	1·36348	1·31985	1·49154	1·49376
49	15·75360	14·01364	13·93953	15·10626	14·86383	95	1·36282	1·24523	1·23064	1·29460	1·29804
50	15·41074	13·65935	13·63015	14·77241	14·54962	96	1·08952	1·10854	1·11756	1·09510	1·09461
51	15·06580	13·30187	13·31674	14·43585	14·22726	97	·84272	·92994	·91859	·86836	·86526
52	14·71963	12·94057	13·00044	14·09700	13·89373	98	·54623	·69119	·66372	·63000	·62692
53	14·37185	12·57787	12·67900	13·75630	13·55275	99	·32906	·46978	·41609	·37489	·37448
54	14·02204	12·21570	12·35046	13·41343	13·20754	100	.....	.....	.....	.....	.....
55	13·66985	11·85678	12·01300	13·06832	12·86124						

Value of Deferred Annuities to Commence at Age 70—Three per Cent.—Friendly Societies—Males.

Ages.	ENGLAND AND WALES.				SCOTLAND	Ages.	ENGLAND AND WALES				SCOTLAND
	Rural Districts.	Town Districts.	City Districts.	Rural, Town & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts
10	·65112	·42290	·38922	·56105	·5388	40	1·91180	1·23160	1·20038	1·65581	1·6149
11	·67220	·43679	·40249	·57933	·5563	41	1·98498	1·28084	1·25396	1·72164	1·6814
12	·69396	·45113	·41622	·59820	·5744	42	2·06122	1·33252	1·31085	1·79063	1·7507
13	·71657	·46599	·43044	·61780	·5933	43	2·14079	1·38687	1·37118	1·86301	1·8230
14	·74022	·48144	·44522	·63825	·6129	44	2·22395	1·44419	1·43505	1·93902	1·8989
15	·76513	·49756	·46062	·65971	·6335	45	2·31101	1·50478	1·50262	2·01895	1·9792
16	·79152	·51444	·47669	·68235	·6552	46	2·40231	1·56895	1·57398	2·10308	2·0643
17	·81967	·53217	·49352	·70637	·6782	47	2·49820	1·63714	1·64923	2·19172	2·1552
18	·84952	·55074	·51120	·73173	·7025	48	2·59917	1·70967	1·72882	2·28534	2·2519
19	·88099	·57013	·52966	·75840	·7282	49	2·70581	1·78690	1·81324	2·38445	2·3546
20	·91400	·59034	·54896	·78632	·7551	50	2·81868	1·86923	1·90308	2·48959	2·4632
21	·94843	·61132	·56910	·81541	·7832	51	2·93849	1·95716	1·99894	2·60140	2·5779
22	·98414	·63304	·59008	·84561	·8126	52	3·06602	2·05114	2·10157	2·72055	2·6987
23	1·02115	·65558	·61192	·87697	·8432	53	3·20187	2·15215	2·21126	2·84777	2·8267
24	1·05954	·67900	·63470	·90953	·8750	54	3·34673	2·26133	2·32836	2·98381	2·9632
25	1·09932	·70339	·65852	·94337	·9081	55	3·50134	2·37996	2·45326	3·12949	3·1099
26	1·14054	·72882	·68500	·97854	·9425	56	3·66650	2·50954	2·59217	3·28575	3·2684
27	1·18327	·75542	·71131	1·01511	·9781	57	3·84311	2·65177	2·72759	3·45365	3·4408
28	1·22754	·78322	·73894	1·05316	1·0151	58	4·03232	2·80777	2·87958	3·63438	3·6289
29	1·27343	·81228	·76790	1·09275	1·0536	59	4·23536	2·97887	3·04474	3·82931	3·8344
30	1·32102	·84266	·79819	1·13398	1·0936	60	4·45356	3·16628	3·22609	4·04001	4·0594
31	1·37039	·87441	·82984	1·17690	1·1354	61	4·68840	3·37159	3·42727	4·26812	4·3065
32	1·42161	·90759	·86301	1·22161	1·1791	62	4·94166	3·59644	3·65267	4·51560	4·5784
33	1·47479	·94226	·89785	1·26821	1·2249	63	5·21719	3·84421	3·90544	4·78608	4·8774
34	1·53003	·97846	·93449	1·31676	1·2728	64	5·51939	4·11891	4·18914	5·08364	5·2060
35	1·58746	1·01625	·97311	1·36739	1·3232	65	5·85372	4·42512	4·50804	5·41330	5·5670
36	1·64720	1·05568	1·01388	1·42021	1·3760	66	6·22638	4·76857	4·86701	5·78105	5·9633
37	1·70939	1·09679	1·05679	1·47529	1·4316	67	6·64502	5·14782	5·27168	6·19381	6·3981
38	1·77413	1·13973	1·10204	1·53282	1·4899	68	7·11758	5·59187	5·73009	6·66056	6·8793
39	1·84517	1·18461	1·14982	1·59294	1·5510	69	7·65366	6·11056	6·25203	7·19217	7·4159

Value of Temporary Annuities to Continue till Age 70.—Three per Cent.—Friendly Societies.—Males.

Ages.	ENGLAND AND WALES.				SCOTLAND	Ages.	ENGLAND AND WALES.				SCOTLAND
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts
10	23·96250	23·85110	23·04221	23·79658	23·5700	40	16·69272	15·77990	15·25823	16·24536	15·9451
11	23·73827	23·63430	22·82783	23·57769	23·3380	41	16·33167	15·45160	14·93937	15·89136	15·6022
12	23·50667	23·41040	22·60628	23·34580	23·0984	42	15·95892	15·07503	14·61721	15·52808	15·2488
13	23·27260	23·18151	22·37899	23·11038	22·8548	43	15·57503	14·68989	14·28985	15·15571	14·8788
14	23·04073	22·95016	22·14733	22·87540	22·6111	44	15·18007	14·29703	13·92013	14·77410	14·4990
15	22·81592	22·71854	21·91305	22·64459	22·3709	45	14·77431	13·89690	13·61262	14·38313	14·1115
16	22·60303	22·48901	21·67785	22·42179	22·1378	46	14·35799	13·48951	13·25909	13·98247	13·7188
17	22·40673	22·26418	21·44306	22·21100	21·9156	47	13·93110	13·14373	12·89297	13·57174	13·3227
18	22·22273	22·04101	21·21115	22·00852	21·7016	48	13·49414	12·65508	12·51518	13·14148	12·9204
19	22·04606	21·81742	20·97714	21·81063	21·4929	49	13·04779	12·22674	12·12629	12·72181	12·5092
20	21·87205	21·59052	20·74158	21·61349	21·2866	50	12·59206	11·79012	11·72707	12·28282	12·0864
21	21·69605	21·35783	20·50238	21·41336	21·0802	51	12·12731	11·34471	11·31780	11·83445	11·6494
22	21·51275	21·11682	20·25825	21·20639	20·8706	52	11·64361	10·88943	10·89887	11·37645	11·1950
23	21·32189	20·86882	20·00830	20·99275	20·6564	53	11·16998	10·42572	10·46774	10·90853	10·7261
24	21·12338	20·61418	19·75319	20·72235	20·4365	54	10·67531	9·95437	10·02210	10·42962	10·2443
25	20·91647	20·35461	19·49448	20·54503	20·2094	55	10·16851	9·47682	9·55974	9·93883	9·7513
26	20·70082	20·09062	19·27816	20·31086	19·9738	56	9·64814	8·99281	9·07183	9·43538	9·2480
27	20·47633	19·82371	19·01876	20·02147	19·7285	57	9·11289	8·50249	8·57401	8·91719	8·7363
28	20·24246	19·55325	18·75753	19·82226	19·4744	58	8·56154	8·00267	8·05180	8·38384	8·2136
29	19·99924	19·27884	18·49264	19·56753	19·2120	59	7·99264	7·49035	7·51362	7·83352	7·6786
30	19·74661	18·99982	18·23217	19·35277	18·9610	60	7·40441	6·96158	6·96113	7·23756	7·1294
31	19·48470	18·71577	17·94457	19·03640	18·6666	61	6·79486	6·41301	6·39522	6·67369	6·5633
32	19·21282	18·42601	17·66199	18·75968	18·3851	62	6·16192	5·84068	5·81582	6·06066	5·9777
33	18·93161	18·12984	17·37485	18·47516	18·0985	63	5·50547	5·24307	5·21827	5·42367	5·3681
34	18·64065	17·82634	17·08401	18·18255	17·8070	64	4·82436	4·61771	4·59735	4·76088	4·7298
35	18·34027	17·51705	16·79005	17·88172	17·5109	65	4·01659	3·96102	3·94733	4·06961	4·0578
36	18·03053	17·19669	16·49348	17·57230	17·2103	66	3·37866	3·26845	3·26164	3·34607	3·3466
37	17·71127	16·86643	16·19158	17·25397	16·9056	67	2·60584	2·52839	2·53283	2·58498	2·5906
38	17·38208	16·52667	15·88473	16·92671	16·5946	68	1·79116	1·74648	1·75309	1·77978	1·7855
39	17·04277	16·17745	15·57357	16·59057	16·2751	69	·92607	·90848	·91278	·92183	·9248

Ages.	ENGLAND AND WALES.				SCOTLAND	Ages.	ENGLAND AND WALES.				SCOTLAND
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts
10	·25397	·26387	·28840	·26143	·26868	56	·58307	·63585	·63115	·60035	·60632
11	·25989	·26977	·29426	·26727	·27492	57	·59351	·64599	·64170	·61056	·61620
12	·26600	·27588	·30031	·27348	·28137	58	·60406	·65601	·65248	·62083	·62595
13	·27216	·28211	·30652	·27976	·28791	59	·61472	·66595	·66335	·63118	·63554
14	·27822	·28840	·31284	·28601	·29445	60	·62550	·67589	·67416	·64240	·64499
15	·28404	·29468	·31921	·29211	·30084	61	·63641	·68589	·68478	·65218	·65428
16	·28948	·30087	·32560	·29794	·30700	62	·64747	·69601	·69509	·66283	·66341
17	·29438	·30690	·33194	·30338	·31280	63	·65856	·70620	·70514	·67350	·67246
18	·29886	·31286	·33818	·30853	·31833	64	·66960	·70980	·71496	·68414	·68148
19	·30309	·31881	·34446	·31352	·32366	65	·68048	·72662	·72460	·69467	·69054
20	·30720	·32483	·35076	·31845	·32888	66	·69112	·73679	·73412	·70504	·69971
21	·31133	·33099	·35714	·32343	·33408	67	·70143	·74730	·74356	·71518	·70907
22	·31562	·33738	·36364	·32858	·33932	68	·71140	·75713	·75292	·72504	·71850
23	·32011	·34395	·37029	·33389	·34467	69	·72098	·76644	·76219	·73454	·72794
24	·32477	·35068	·37705	·34082	·35015	70	·73015	·77497	·77137	·74363	·73729
25	·32964	·35753	·38389	·34500	·35580	71	·73889	·78249	·78048	·75224	·74650
26	·33472	·36448	·38942	·35079	·36166	72	·74716	·78874	·78953	·76030	·75549
27	·34001	·37148	·39621	·35816	·36777	73	·75507	·79411	·79851	·76797	·76443
28	·34553	·37855	·40301	·36285	·37409	74	·76274	·79897	·80742	·77540	·77358
29	·35128	·38570	·40989	·36912	·38061	75	·77028	·80372	·81628	·78274	·78313
30	·35725	·39294	·41688	·37417	·38676	76	·77781	·80878	·82510	·79014	·79329
31	·36344	·40029	·42405	·38214	·39412	77	·78545	·81460	·83392	·79778	·80430
32	·36987	·40776	·43131	·38889	·40104	78	·79302	·82108	·84263	·80549	·81556
33	·37651	·41538	·43866	·39582	·40806	79	·80031	·82812	·85113	·81316	·82655
34	·38480	·42316	·44606	·40293	·41515	80	·80718	·83564	·85933	·82063	·83682
35	·39046	·43107	·45350	·41022	·42231	81	·81339	·84356	·86718	·82774	·84592
36	·39774	·43925	·46095	·41769	·42953	82	·81884	·85186	·87471	·83427	·85338
37	·40522	·44767	·46850	·42536	·43678	83	·82400	·86034	·88174	·84093	·85966
38	·41292	·45632	·47611	·43322	·44414	84	·82924	·86885	·88838	·84752	·86522
39	·42085	·46518	·48378	·44125	·45167	85	·83517	·87726	·89463	·85451	·87048
40	·42900	47539	·49150	·44948	·45942	86	·84233	·88549	·90050	·86222	·87596
41	·43738	·48352	·49922	·45787	·46747	87	·85121	·89354	·90603	·87106	·88218
42	·44602	·49298	·50695	·46645	·47574	88	·86133	·90115	·91117	·88042	·88888
43	·45488	·50262	·51473	·47518	·48441	89	·87206	·90818	·91592	·88986	·89577
44	·46396	·51239	·52634	·48418	·49326	90	·88289	·91457	·92022	·89896	·90264
45	·47324	·52228	·53064	·49314	·50221	91	·89355	·92011	·92404	·90741	·90932
46	·48271	·53228	·53884	·50236	·51117	92	·90369	·92445	·92718	·91488	·91563
47	·49235	·54036	·54731	·51174	·52006	93	·91331	·92797	·92990	·92142	·92163
48	·50214	·55248	·55600	·52125	·52896	94	·92251	·93116	·93243	·92743	·92736
49	·51203	·56271	·56487	·53088	·53795	95	·93118	·93461	·93503	·93317	·93307
50	·52202	·57303	·57388	·54061	·54710	96	·93914	·93859	·93832	·93898	·93899
51	·53206	·58344	·58301	·55041	·55649	97	·94633	·94379	·94412	·94558	·94567
52	·54215	·59396	·59222	·56028	·56620	98	·95497	·95074	·95154	·95252	·95261
53	·55227	·60453	·60158	·57020	·57613	99	·96129	·95719	·95875	·95995	·95997
54	·56247	·61508	·61115	·58019	·58619	100	.....	.....	.....	.....	.....
55	·57272	·62553	·62098	·59024	·59628						

Annual Premium for Sum at Death—Three per Cent.—Friendly Societies' Tables.

Age.	ENGLAND AND WALES.				SCOTLAND.	Age.	ENGLAND AND WALES.				SCOTLAND.
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural. Districts.	Town Districts.	City Districts.	Rural, Town & City Districts	Rural, Town, & City Districts
10	·00992	·01044	·01181	·01031	·01070	56	·04073	·05086	·04984	·04375	·04486
11	·01023	·01076	·01215	·01062	·01104	57	·04253	·05315	·05216	·04566	·04676
12	·01056	·01110	·01250	·01096	·01140	58	·04444	·05555	·05469	·04769	·04874
13	·01089	·01145	·01287	·01131	·01178	59	·04647	·05806	·05739	·04985	·05079
14	·01123	·01181	·01326	·01167	·01216	60	·04865	·06074	·06026	·05232	·05292
15	·01156	·01217	·01366	·01202	·01253	61	·05098	·06360	·06327	·05461	·05512
16	·01187	·01254	·01406	·01236	·01290	62	·05349	·06669	·06640	·05726	·05741
17	·01215	·01290	·01447	·01269	·01326	63	·05618	·07001	·06965	·06008	·05980
18	·01242	·01326	·01488	·01300	·01360	64	·05903	·07124	·07306	·06309	·06232
19	·01267	·01363	·01531	·01330	·01394	65	·06203	·07742	·07663	·06627	·06499
20	·01292	·01401	·01574	·01361	·01427	66	·06517	·08153	·08042	·06962	·06787
21	·01317	·01441	·01618	·01392	·01461	67	·06843	·08613	·08445	·07314	·07099
22	·01343	·01483	·01664	·01425	·01496	68	·07180	·09080	·08875	·07680	·07434
23	·01371	·01527	·01713	·01460	·01532	69	·07526	·09558	·09335	·08060	·07793
24	·01401	·01573	·01763	·01506	·01569	70	·07881	·10031	·09827	·08448	·08174
25	·01432	·01621	·01815	·01534	·01609	71	·08242	·10478	·10356	·08843	·08577
26	·01465	·01671	·01858	·01574	·01650	72	·08607	·10875	·10926	·09238	·08999
27	·01501	·01722	·01911	·01625	·01694	73	·08979	·11234	·11543	·09640	·09452
28	·01538	·01774	·01966	·01659	·01741	74	·09364	·11576	·12212	·10055	·09951
29	·01577	·01829	·02023	·01704	·01790	75	·09767	·11926	·12941	·10493	·10518
30	·01619	·01885	·02082	.01741	·01837	76	·10196	·12319	·13740	·10966	·11178
31	·01663	·01944	·02145	·01801	·01895	77	·10663	·12798	·14625	·11490	·11970
32	·01710	·02005	·02209	·01854	·01950	78	·11159	·13367	·15596	·12062	·12879
33	·01759	·02070	·02276	·01908	·02008	79	·11673	·14033	·16652	·12676	·13880
34	·01818	·02137	·02345	·01966	·02068	80	·12193	·14808	·17793	·13325	·14937
35	·01866	·02207	·02417	·02026	·02129	81	·12696	·15706	·19016	·13955	·15990
36	·01924	·02282	·02491	·02089	·02193	82	·13165	·16749	·20335	·14662	·16952
37	·01984	·02361	·02567	·02156	·02259	83	·13636	·17943	·21717	·15397	·17842
38	·02049	·02445	·02647	·02226	·02327	84	·14144	·19297	·23181	·16189	·18697
39	·02117	·02533	·02730	·02300	·02399	85	·14758	·20818	·24729	·17107	·19576
40	·02188	·02639	·02815	·02378	·02475	86	·15560	·22522	·26359	·18228	·20568
41	·02264	·02727	·02904	·02460	·02557	87	·16662	·24446	·28082	·19676	·21809
42	·02345	·02832	·02995	·02546	·02643	88	·18091	·26551	·29876	·21445	·23298
43	·02431	·02943	·03089	·02637	·02737	89	·19853	·28807	:31730	·23531	·25031
44	·02521	·03061	·03202	·02734	·02835	90	·21958	·31183	·33597	·25913	·27003
45	·02617	·03184	·03293	·02834	·02939	91	·24449	·33544	·35430	·28544	·29208
46	·02718	·03315	·03403	·02940	·03046	92	·27331	·35633	·37084	·31307	·31611
47	·02825	·03424	·03522	·03053	·03156	93	·30686	·37524	·38635	·34154	·34254
48	·02938	·03596	·03647	·03171	·03271	94	·34677	·39397	·40193	·37224	·37187
49	·03056	·83748	·03781	·03296	·03391	95	·39410	·41627	·41918	·40668	·40604
50	·03181	·03909	·03923	·03428	·03518	96	·44946	·44515	·44311	.44818	·44827
51	·03312	·04080	·04072	·03566	·03655	97	·51356	·48904	·49209	·50609	·50698
52	·03449	·04261	·04230	·03711	·03802	98	·61762	·56217	·57194	·58437	·58554
53	·03593	·04452	·04398	·03864	·03959	99	·72326	.65124	·67704	·69820	·69841
54	·03744	·04654	·04578	·04025	·04126	100	.....	.....	.....	.....	.....
55	·03904	·04865	·04772	·04196	·04302						

Temporary Annual Premium to continue till Age 70 *for Sum at Death—Three per Cent.—Friendly Societies—Males.*

Ages.	ENGLAND AND WALES.				SCOTLAND	Age.	ENGLAND AND WALES.				SCOTLAND.
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts
10	·01017	·01062	·01200	·01054	·01094	40	·02425	·02833	·03023	·02606	·02711
11	·01051	·01095	·01235	·01088	·01130	41	·02524	.02939	·03132	·02711	·02816
12	·01086	·01130	·01272	·01123	·01168	42	·02630	·03067	·03246	·02822	·02928
13	·01121	·01167	·01311	·01160	·01207	43	·02744	·03203	·03367	·02941	·03051
14	·01157	·01204	·01352	·01198	·01247	44	·02868	·03350	·03510	·03070	·03183
15	·01193	·01242	·01393	·01236	·01287	45	·03000	·03514	·03631	·93206	·03323
16	·01227	·01281	·01436	·01272	·01327	46	·03143	·03674	·03779	·03353	·03473
17	·01258	·01319	·01479	·01307	·01365	47	·03298	·03821	·03939	·03512	·03631
18	·01287	·01358	·01523	·01341	·01402	48	·03465	·04046	·04114	·03686	·03800
19	·01315	·01397	·01567	·01375	·01439	49	·03645	·04254	·04303	·03869	·03982
20	·01343	·01438	·01613	·01408	·01476	50	·03841	·04480	·04509	·04070	·04181
21	·01372	·01480	·01661	·01443	·01513	51	·04062	·04726	·04733	.04289	·04399
22	·01402	·01526	·01711	·01480	·01552	52	·04288	·04995	·04977	·04527	·04643
23	·01434	·01573	·01763	·01522	·01592	53	·04538	·05291	·05246	·04788	·04913
24	·01468	·01623	·01817	·01569	·01633	54	·04818	·05615	·05545	·05076	·05213
25	·01504	·01674	·01873	·01601	·01678	55	·05128	·05971	·05881	·05396	·05546
26	·01543	·01728	·01920	·01646	·01724	56	·05476	·06363	·06267	·05753	·05917
27	·01583	·01784	·01979	·01704	·01774	57	·05869	·06798	·06702	·06157	·06329
28	·01627	·01842	·02040	·01743	·01827	58	·06318	·07287	·07208	·06616	·06794
29	·01673	·01902	·02103	·01795	·01883	59	·06836	·07844	·07792	·07145	·07323
30	·01722	·01965	·02168	·01838	·01938	60	·07443	·08489	·08468	·07798	·07934
31	·01774	·02030	·02238	·01907	·02004	61	·08164	·09253	·09260	·08499	·08651
32	·01830	·02099	·02311	·01968	·02069	62	·09041	·10175	·10198	·09388	·09507
33	·01889	·02171	·02387	·02033	·02137	63	·10123	·11312	·11340	·10485	·10560
34	·01959	·02248	·02467	·02101	·02207	64	·11496	·12635	·12773	·11876	·11894
35	·02019	·02328	·02549	·02173	·02281	65	·13565	·14647	·14646	·13703	·13653
36	·02090	·02414	·02635	·02249	·02359	66	·15784	·17261	·17226	·16223	·16098
37	·02166	·02506	·02725	·02330	·02439	67	·19453	·21180	·21047	·19949	·19748
38	·02246	·02604	·02820	·02417	·02524	68	·25488	·27567	·27348	·26083	·25794
39	·02333	·02708	·02919	·02509	·02615	69	·37433	·40160	·39847	·38221	·37819

Probability of Living One Year.—Friendly Societies—Males.

Age.	ENGLAND AND WALES.				SCOTLAND	Age.	ENGLAND AND WALES.				SCOTLAND
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts
10	·997700	·997250	·996040	·997500	·99750	56	·982666	·974756	·976612	·979928	·97838
11	·997705	·997253	·996034	·997504	·99750	57	·981669	·972773	·975633	·978780	·97663
12	·997498	·997154	·995958	·997337	·99734	58	·980622	·970838	·974129	·977568	·97480
13	·997090	·996945	·995810	·996997	·99701	59	·979537	·969035	·972100	·976283	·97290
14	·996475	·996632	·995579	·996493	·99651	60	·978407	·967278	·969541	·974951	·97091
15	·995652	·996214	·995263	·995821	·99586	61	·977212	·965606	·966439	·973550	·96883
16	·994635	·995680	·994882	·994978	·99504	62	·975604	·963612	·963337	·971793	·96686
17	·993807	995273	·994381	·994298	·99434	63	·973606	·961309	·960244	·969710	·96499
18	·993203	·994952	·994101	·993781	·99376	64	·971172	·958725	·957137	·967276	·96321
19	·992803	·994751	·993784	·993432	·99332	65	·968353	·955815	·954033	·964479	·96156
20	·992605	·994651	·993556	·993243	·99298	66	·965108	·954118	·950934	·961360	·96000
21	·992634	·994653	·993377	·993217	·99277	67	·961614	·948208	·947598	·957820	·95796
22	·992664	·994583	·993227	·993171	·99263	68	·957857	·942570	·944012	·953868	·95547
23	·992685	·994479	·993030	·993123	·99252	69	·953845	·935736	·940157	·949486	·95248
24	·992728	·994289	·992745	·993055	·99246	70	·949565	·927706	·936080	·944698	·94905
25	·992772	·994054	·990194	·992985	·99246	71	·945026	·918493	·933895	·939486	·94516
26	·992807	·993749	·991895	·992892	·99250	72	·940795	·911133	·927020	·934765	·94179
27	·992853	·993440	·991486	·992787	·99248	73	·936865	·905664	·921866	·930496	·93911
28	·992880	·993146	·991157	·992679	·99241	74	·933210	·902058	·916366	·926711	·93701
29	·992895	·992869	·990909	·992558	·99227	75	·929889	·900362	·910395	·923389	·93550
30	·992890	·992597	·990723	·992435	·99208	76	·926863	·900540	·904073	·920535	·93461
31	·992895	·992342	·990408	·992298	·99182	77	·922684	·899633	·896392	·916625	·93023
32	·992856	·992104	·990037	·992160	·99153	78	·917416	·897655	·887262	·911667	·92232
33	·992816	·991894	·989609	·992017	·99120	79	·911062	·894566	·876812	·905725	·91098
34	·992741	·991703	·989122	·991860	·99083	80	·903566	·890423	·864990	·898349	·89612
35	·992641	·991530	·988585	·991700	·99044	81	·895364	·885180	·852462	·890443	·87780
36	·992528	·991388	·988175	·991537	·99001	82	·889540	·877754	·837570	·883503	·86237
37	·992412	·991196	·987715	·991347	·98967	83	·886136	·868081	·822477	·877794	·84986
38	·992283	·990977	·987192	·991128	·98942	84	·885071	·856140	·806360	·873264	·84025
39	·992163	·990705	·986624	·990892	·98927	85	·886486	·842001	·789248	·870008	·83359
40	·992028	·990401	·985986	·990613	·98923	86	·889855	·826116	·771388	·867801	·82980
41	·991903	·990054	·985297	·990316	·98928	87	·888845	·805770	·751910	·859812	·82206
42	991714	·989636	·984685	·989986	·98914	88	·881935	·782148	·731410	·845851	·81026
43	·991484	·989120	·984155	·989621	·98879	89	·869024	·755964	·709444	·825862	·79456
44	·991202	·988525	·983683	·989222	·98825	90	·851890	·725800	·686766	·800000	·77510
45	·990855	·987873	·983303	·988797	·98751	91	·826988	·692127	·662486	·768006	·75145
46	·990466	·987097	·983006	·988347	·98657	92	·798192	·663837	·641996	·733945	·72605
47	·989988	·986306	·982584	·987804	·98577	93	·765190	·641944	·624665	·701852	·69828
48	·989406	·985484	·982044	·987190	·98510	94	·723755	·625498	·609442	·669525	·66952
49	·988755	·984631	·981378	·986500	·98457	95	·671780	·608280	·598592	·636453	·63830
50	·988003	·983727	·980604	·985730	·98416	96	·568349	·591623	·600000	·603715	·60444
51	·987160	·982810	·979701	·984890	·98391	97	·605112	·566372	·568628	·548718	·54779
52	·986298	·981654	·978906	·983985	·98336	98	·423077	·484375	·482759	·471963	·46980
53	·985418	·980270	·978196	·983043	·98253	99	·347626	·477232	·426602	·386139	·38571
54	·984516	·978663	·977564	·982053	·98143	100	.....	.....	.....	.....	.....
55	·983605	·976814	·977049	·981017	·98005						

Probability of Dying in One Year.—Friendly Societies—Males.

Age.	ENGLAND AND WALES.				SCOTLAND	Age.	ENGLAND AND WALES.				SCOTLAND
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town & City Districts
10	·002300	·002750	·003960	·002500	·00250	56	·017334	·025244	·023388	·020072	·02162
11	·002295	·002747	·003966	·002496	·00250	57	·018331	·027227	·024367	·021220	·02337
12	·002502	·002846	·004042	·002663	·00266	58	·019378	·029162	·025871	·022432	·02520
13	·002910	·003055	·004190	·003003	·00299	59	·020463	·030965	·027900	·023717	·02710
14	·003525	·003368	·004421	·003507	·00349	60	·021593	·032722	·030459	·025049	·02909
15	·004348	·003786	·004737	·004179	·00414	61	·022788	·034394	·033561	·026450	·03117
16	·005365	·004320	·005118	·005022	·00496	62	·024396	·036388	·036663	·028207	·03314
17	·006193	·004727	·005619	·005712	·00566	63	·026394	·038691	·039756	·030290	·03501
18	·006797	·005048	·005899	·006219	·00624	64	·028828	·041275	·042863	·032724	·03679
19	·007197	·005249	·006216	·006568	·00668	65	·031647	·044185	·045967	·035521	·03844
20	·007395	·005349	·006444	·006757	·00702	66	·034892	·045882	·049066	·038640	·04000
21	·007366	·005347	·006623	·006783	·00723	67	·038386	·051792	·052402	·042180	·04204
22	·007336	·005417	·006773	·006829	·00737	68	·042143	·057430	·055988	·046132	·04453
23	·007315	·005521	·006970	·006877	·00748	69	·046155	·064264	·059843	·050514	·04752
24	·007272	·005711	·007255	·006945	·00754	70	·050435	·072294	·063920	·055302	·05095
25	·007228	·005946	·009806	·007015	·00754	71	·054974	·081507	·066105	·060514	·05484
26	·007193	·006251	·008105	·007108	·00750	72	·059205	·088867	·072980	·065235	·05821
27	·007147	·006560	·008514	·007213	·00752	73	·063135	·094336	·078134	·069504	·06089
28	·007120	·006854	·008843	·007321	·00759	74	·066790	·097942	·083634	·073289	·06299
29	·007105	·007131	·009091	·007442	·00773	75	·070111	·099638	·089605	·076611	·06450
30	·007110	·007403	·009277	·007565	·00792	76	·073137	·099460	·095927	·079465	·06539
31	·007105	·007658	·009592	·007702	·00818	77	·077316	·100367	·103608	·083375	·06977
32	·007144	·007896	·009963	·007840	·00847	78	·082584	·102345	·112738	·088333	·07768
33	·007184	·008106	·010391	·007983	·00880	79	·088938	·105434	·123188	·094275	·08902
34	·007259	·008297	·010878	·008140	·00917	80	·096434	·109577	·135010	·101651	·10388
35	·007359	·008470	·011415	·008300	·00956	81	·104636	·114820	·147538	·109557	·12220
36	·007472	·008612	·011825	·008463	·00999	82	·110460	·122246	·162430	·119497	·13763
37	·007588	·008804	·012285	·008653	·01033	83	·113864	·131919	·177523	·122206	·15014
38	·007717	·009023	·012808	·008872	·01058	84	·114929	·143860	·193640	·126736	·15975
39	·007837	·009295	·013376	·009108	·01073	85	·113514	·157999	·210752	·129992	·16641
40	·007972	·009599	·014014	·009387	·01077	86	·110145	·173884	·228612	·132199	·17020
41	·008097	·009946	·014703	·009684	·01072	87	·111155	·194230	·248090	·140188	·17794
42	·008286	·010364	·015315	·010014	·01086	88	·118065	·217852	·268590	·154149	·18974
43	·008516	·010880	·015845	·010379	·01121	89	·130976	·244036	·290556	·174138	·20544
44	·008798	·011475	·016317	·010778	·01175	90	·148110	·274200	·313234	·200000	·22490
45	·009145	·012127	·016697	·011203	·01249	91	·173012	·307873	·337514	·231994	·24855
46	·009534	·012903	·016994	·011653	·01343	92	·201808	·336173	·358004	·266055	·27395
47	·010012	·013694	·017416	·012196	·01423	93	·234810	·358056	·375335	·298148	·30172
48	·010594	·014516	·017956	·012810	·01490	94	·276245	·374502	·390558	·330475	·33048
49	·011245	·015369	·018622	·013500	·01543	95	·328220	·391720	·401408	·363547	·36170
50	·011997	·016273	·019396	·014270	·01584	96	·431651	·408377	·400000	·396285	·39556
51	·012840	·017190	·020299	·015110	·01609	97	·394888	·433628	·431372	·451282	·45221
52	·013702	·018346	·021094	·016015	·01664	98	·576923	·515625	·517241	·528037	·53020
53	·014582	·019730	·021804	·016957	·01747	99	552374	·522768	·573398	·613861	·61429
54	·015484	·021337	·022436	·017947	·01857	100	.....	.....	.....	.....	.....
55	·016395	·023186	·022951	·018983	·01995						

Single Premium for Sickness—Three per Cent.—Friendly Societies—Males.

Ages.	ENGLAND AND WALES.				SCOTLAND	Ages.	ENGLAND AND WALES.				SCOTLAND
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts
10	30·51966	36·22972	28·20766	33·01116	27·2409	40	46·56296	55·56052	46·00568	49·66860	44·1712
11	31·27814	36·13063	28·81759	33·61274	27·9050	41	47·25304	56·48385	46·55024	50·04597	44·9897
12	31·86005	36·21606	29·44849	34·13643	28·5906	42	47·94233	57·37929	47·09078	50·52697	45·8073
13	32·29090	36·45319	30·10321	34·60199	29·2782	43	48·62687	58·23508	47·61848	51·08771	46·6212
14	32·62343	36·80865	30·78488	35·03022	29·9474	44	49·30957	59·04067	48·12575	51·70356	47·4299
15	32·90212	37·24804	31·49726	35·44230	30·5778	45	49·99718	59·78395	48·60345	52·34908	48·2316
16	33·17729	37·73589	32·24450	35·86053	31·1483	46	50·69131	60·45116	49·04110	52·99728	49·0253
17	33·49848	38·23622	33·03046	36·30847	31·6374	47	51·39297	61·03194	49·42792	53·62002	49·8103
18	33·86100	38·74763	33·83867	36·78375	32·0632	48	52·09479	61·53154	49·75235	54·21257	50·5632
19	34·25860	39·27016	34·64059	37·28393	32·4440	49	52·78710	61·95589	50·00207	54·76878	51·2595
20	34·68519	39·80233	35·41518	37·80606	32·7979	50	53·45831	62·31153	50·16440	55·28222	51·8728
21	35·13445	40·34312	36·13620	38·34714	33·1448	51	54·09793	62·60595	50·22514	55·74687	52·3762
22	35·59858	40·89142	36·77765	38·90363	33·5043	52	54·69490	62·84480	50·17009	56·15597	52·7393
23	36·07612	41·45520	37·35127	39·47623	33·8776	53	55·23193	63·02802	49·97483	56·49660	52·9757
24	36·56585	42·04129	37·87207	40·06480	34·2665	54	55·60116	63·15490	49·61452	56·75405	53·0986
25	37·06553	42·65912	38·35728	40·67028	34·6727	55	55·95894	63·22429	49·06310	56·91284	53·1216
26	37·57332	43·31879	38·91030	41·29273	35·0976	56	56·19870	63·23545	48·29088	56·95763	53·0585
27	38·08797	44·02626	39·38292	41·93312	35·5429	57	56·29924	63·18569	47·26842	56·86948	52·9246
28	38·61335	44·77782	39·85820	42·59369	36·0118	58	56·20182	62·99597	45·99730	56·59299	52·6675
29	39·15479	45·56794	40·33660	43·27624	36·5070	59	55·84340	62·58375	44·47561	56·06855	52·2309
30	39·71760	46·39042	40·81807	43·98326	37·0322	60	55·15634	61·85428	42·69764	55·23260	51·5541
31	40·30747	47·23943	41·30351	44·71687	37·6777	61	54·06849	60·71069	40·65305	54·01532	50·5716
32	41·02354	48·10816	41·80177	45·47969	38·2774	62	52·50331	59·04517	38·32589	52·34221	49·2112
33	41·67624	48·99586	42·31243	46·24229	38·9130	63	50·30187	56·66607	35·67345	50·05733	47·2933
34	42·35024	49·90100	42·83533	46·97425	39·5825	64	47·28872	53·36069	32·64623	46·98774	44·6236
35	43·04039	50·82250	43·37036	47·64425	40·2840	65	43·27124	48·88897	29·18848	42·94219	40·9909
36	43·74110	51·75921	43·81632	48·21951	41·0152	66	38·02084	42·98096	25·23498	37·70515	36·1634
37	44·44605	52·70909	44·36256	48·66577	41·7747	67	31·30418	35·26872	20·71028	31·02805	29·8892
38	45·15279	53·66490	44·91049	49·02598	42·5575	68	22·90367	25·72042	15·26735	22·69965	21·9507
39	45·85947	54·61790	45·45883	49·34501	43·3583	69	12·56936	14·07064	8·51399	12·46247	12·0902

Temporary Annual Premium for Sickness, to continue till Age 70—Three per Cent.—Friendly Societies—Males.

Ages.	ENGLAND AND WALES.				SCOTLAND	Ages.	ENGLAND AND WALES				SCOTLAND
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts		Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts	Rural, Town, & City Districts
10	1·22262	1·45787	1·17326	1·33128	1·1087	40	2·63176	3·31129	2·82968	2·88011	2·6067
11	1·26436	1·46668	1·20941	1·36761	1·1466	41	2·72540	3·43334	2·92046	2·96282	2·7099
12	1·30006	1·48363	1·24748	1·40215	1·1864	42	2·82697	3·56947	3·01531	3·05704	2·8191
13	1·33034	1·50748	1·28762	1·43515	1·2274	43	2·93374	3·71163	3·11438	3·16221	2·9361
14	1·35701	1·53689	1·32995	1·46721	1·2684	44	3·04755	3·85961	3·22556	3·27775	3·0602
15	1·38152	1·57042	1·37464	1·49896	1·3084	45	3·16953	4·02243	3·32613	3·40302	3·1917
16	1·40564	1·60653	1·42185	1·53108	1·3462	46	3·30065	4·17206	3·43929	3·53729	3·3308
17	1·43115	1·64357	1·47174	1·56428	1·3806	47	3·44201	4·31512	3·55776	3·67973	3·4777
18	1·45809	1·68168	1·52350	1·59870	1·4124	48	3·59420	4·50613	3·68122	3·83358	3·6323
19	1·48653	1·72106	1·57621	1·63450	1·4424	49	3·75768	4·68414	3·80931	3·99137	3·7944
20	1·51649	1·76190	1·62891	1·67184	1·4716	50	3·93305	4·87185	3·94155	4·16193	3·9639
21	1·54804	1·80443	1·68057	1·71091	1·5011	51	4·13052	5·07148	4·07744	4·34353	4·1406
22	1·58126	1·84888	1·73004	1·75191	1·5319	52	4·32589	5·28577	4·21637	4·53732	4·3247
23	1·61618	1·89563	1·77793	1·79496	1·5643	53	4·53847	5·51633	4·35786	4·74421	4·5178
24	1·65281	1·94508	1·82488	1·84440	1·5985	54	4·76228	5·76527	4·50137	4·96553	4·7223
25	1·69122	1·99765	1·87159	1·88769	1·6348	55	5·01042	6·03468	4·64624	5·20282	4·9409
26	1·73142	2·05394	1·91883	1·93764	1·6734	56	5·27780	6·47550	4·79465	5·45813	5·1774
27	1·77349	2·11424	1·96730	1·99477	1·7147	57	5·56707	6·64938	4·93716	5·73443	5·4358
28	1·81774	2·17862	2·01737	2·04558	1·7589	58	5·87791	6·99748	5·08156	6·03090	5·7163
29	1·86458	2·24707	2·06932	2·10410	1·8062	59	6·20990	7·37117	5·22405	6·34725	6·0183
30	1·91441	2·31954	2·12238	2·16104	1·8552	60	6·56278	7·76910	5·36326	6·70497	6·3417
31	1·96769	2·39602	2·18023	2·23178	1·9158	61	6·93643	8·18965	5·49721	7·03903	6·6864
32	2·02491	2·47648	2·23994	2·30164	1·9746	62	7·33090	8·63148	5·62308	7·41322	7·0527
33	2·09096	2·56123	2·30273	2·37442	2·0375	63	7·73224	9·07664	5·73687	7·79264	7·4266
34	2·15625	2·65059	2·36869	2·44880	2·1047	64	8·11913	9·49866	5·83244	8·15635	7·7880
35	2·22543	2·74463	2·43790	2·52330	2·1762	65	8·62563	9·85462	5·89985	8·47051	8·1045
36	2·29847	2·84443	2·50472	2·59632	2·2523	66	8·68322	10·06941	5·92143	8·67569	8·3199
37	2·37536	2·95018	2·58048	2·66604	1·3331	67	8·68152	9·99570	5·86224	8·65501	9·3243
38	2·45635	3·06190	2·65983	2·73480	2·4188	68	8·20579	9·36487	5·54553	8·16599	7·8803
39	2·54171	3·17963	2·74285	2·80520	2·5099	69	6·52591	7·37269	4·45111	6·48469	6·2813

Annual Premium—Sickness.

Ages.	Highland Society*.	Ansell's Results.	England & Wales.	Scotland.	Ages.	Highland Society*.	Ansell's Results.	England & Wales.	Scotland.
			Rural, Town, & City Districts.	Rural, Town, & City Districts.				Rural, Town, & City Districts.	Rural, Town, & City Districts.
21	·9666	1·3479	1·7109	1·5011	41	1·8417	2·3532	2·9628	2·7099
22	·9917	1·3760	1·7579	1·5319	42	1·9208	2·4380	3·0570	2·8191
23	1·0167	1·4070	1·7519	1·5643	43	2·0042	2·5277	3·1622	2·9361
24	1·0458	1·4392	1·8444	1·5985	44	2·0958	2·6226	3·2778	3·0602
25	1·0708	1·4731	1·8877	1·6348	45	2·1917	2·7232	3·4030	3·1917
26	1·1000	1·5087	1·9376	1·6734	46	.....	2·8300	3·5373	3·3308
27	1·1333	1·5463	1·9948	1·7147	47	.....	2·9435	3·6797	3·4777
28	1·1667	1·5859	2·0456	1·7589	48	.....	3·0645	3·8336	3·6323
29	1·2000	1·6277	2·1041	1·8062	49	.....	3·1936	3·9914	3·7944
30	1·2417	1·6718	2·1610	1·8552	50	.....	3·3318	4·1619	3·9639
31	1·2750	1·7184	2·2318	1·9158	51	.....	3·4800	4·2435	4·1406
32	1·3167	1·7676	2·3016	1·9746	52	.....	3·6393	4·5373	4·3247
33	1·3625	1·8195	2·3744	2·0375	53	.....	3·8107	4 7442	4·5178
34	1·4125	1·8743	2·4488	2·1047	54	.....	3·9958	4·9655	4·7223
35	1·4583	1·9320	2·5233	2·1762	55	.....	4·1963	5·2028	4·9409
36	1·5167	1·9930	2·5963	2·2523	56	.....	4·4139	5·4581	5·1774
37	1·5750	2·0574	2·6660	2·3331	57	.....	4·6505	5·7344	5·4358
38	1·6333	2·1254	2·7348	2·4188	58	.....	4·9085	6·0309	5·7163
39	1·6958	2·1972	2·8052	2·5099	59	.....	5·1903	6·3473	6·0183
40	1·7667	2·2731	2·8801	2·6067	60	.....	5·4990	6·7050	6·3417

* This column presumes on money bearing interest at 4 per cent. per annum, and consists of the reciprocals to the quantities given at page 236 of the Highland Society's Report. The other columns are calculated at 3 per cent., as explained in the body of the text.

Whole Population—Three per Cent.—Males—Females.

Age.	Value of Annuities.		Single Premium for Sum at Death.		Annual Premium. for Sum at Death.		Ages.	Value of Annuities.		Single Premium for Sum at Death.		Annual Premium for Sum at Death.	
	Males.	Females.	Males.	Females.	Males	Females.		Males.	Females.	Males.	Females.	Males.	Females.
10	23·11227	23·14338	·29770	·29679	·01235	·01229	58	11·38827	11·98749	·63918	·62172	·05160	·04787
11	22·99545	23·02800	·30110	·30015	·01255	·01249	59	11·03421	11·62663	·64949	·63224	·05397	·05007
12	22·85265	22·89028	·30526	·30417	·01280	·01273	60	10·67861	11·26347	·65985	·64281	·05650	·05242
13	22·68828	22·73433	·31005	·30871	·01309	·01301	61	10·32147	10·89617	·67025	·65351	·05920	·05493
14	22·50725	22·56764	·31532	·31357	·01341	·91331	62	9·96440	10·52557	·68065	·66430	·06208	·05764
15	22·31543	22·38900	·32091	·31877	·01376	·01363	63	9·60720	10·15327	·69105	·67515	·06515	·06053
16	22·11918	22·21132	·32663	·32394	·01413	·01396	64	9·25149	9·78209	·70141	·68596	·06842	·06362
17	21·92528	22·03870	·33227	·32897	·01449	·01428	65	8·89699	9·41209	·71174	·69673	·07192	·06692
18	21·73428	21·87023	·33784	·33388	·01486	·01460	66	8·54558	9·04511	·72197	·70742	·07563	·07043
19	21·54610	21·70490	·34483	·33869	·01533	·01492	67	8·19602	8·68050	·73216	·71804	·07962	·07417
20	21·36038	21·54070	·34873	·34347	·01560	·01524	68	7·84976	8·31957	·74224	·72855	·08387	·07817
21	21·17461	21·37586	·35414	·34828	·01597	·01557	69	7·50606	7·96177	·75225	·73898	·08844	·08246
22	20·98913	21·20815	·35954	·35316	·01635	·01590	70	7·16642	7·60903	·76214	·74925	·09333	·08703
23	20·80300	21·03800	·36496	·35812	·01674	·01625	71	6·83048	7·26065	·77193	·75940	·09858	·09193
24	20·61646	20·86560	·37039	·36314	·01714	·01661	72	6·50013	6·91893	·78155	·76935	·10421	·09715
25	20·42957	20·69063	·37584	·36824	·01754	01698	73	6·17497	6·58320	·79102	·77913	·11025	·10274
26	20·24140	20·51300	·38132	·37341	·01795	·01736	74	5·85700	6·25542	·80028	·78868	·11671	·10870
27	20·05073	20·33263	·38687	·37866	·01838	·01775	75	5·54513	5·93475	·80937	·79802	·12366	·11507
28	19·85678	20·14938	·39252	·38400	·01882	·01816	76	5·24219	5·62337	·81819	·80709	·13413	·12185
29	19·65875	19·96300	·39829	·38943	·01928	·01858	77	4·94773	5·32100	·82677	·81589	·13901	·12908
30	19·45529	19·77275	·40421	·39497	·01976	·01901	78	4·66492	5·02946	·83500	·82438	·14740	·13673
31	19·24592	19·57900	·41031	·40061	·02027	·01947	79	4·39401	4·74776	·84289	·83259	·15627	·14485
32	19·03114	19·38100	·41657	40638	·02080	·01994	80	4·13709	4·47790	·85037	·84045	·16554	·15343
33	18·80978	19·17900	·42302	41226	·02135	·02043	81	3·89182	4·21856	·85752	·84800	·17530	·16250
34	18·58228	18·97000	·42964	·41835	·02194	·02095	82	3·65952	3·97062	·86429	·85523	·18549	·17206
35	18·34839	18·76000	·43645	·42446	·02256	·02148	83	3·44548	3·73255	·87052	·86216	·19582	·18218
36	18·10807	18·54214	·44345	·43081	·02321	·02205	84	3·22525	3·50576	·87693	·86877	·20754	·19282
37	17·86131	18·31820	·45064	·43733	·02389	·02264	85	3·02174	3·28766	·88286	·87512	·21953	·20410
38	17·60807	18·08791	·45802	·44404	·02461	·02326	86	2·82919	3·08074	·88847	·88114	·23203	·21593
39	17·34854	17·85051	·46558	·45096	·02537	·02392	87	2·64670	2·88456	·89379	·88686	·24510	·22883
40	17·08318	17·60569	·47331	·45809	·02617	·02462	88	2·48467	2·70072	·89850	·89221	·25784	·24110
41	16·81151	17·35314	·48122	·46544	·02702	·02536	89	2·32768	2·52868	·90308	·89722	·27138	·25427
42	16·53416	17·09300	·48930	·47302	·02791	·02614	90	2·18378	2·37019	·90727	·90184	·28497	·26759
43	16·25092	16·82518	·49755	·48082	·02884	·02695	91	2·05148	2·22344	·91112	·90611	·29858	·28110
44	15·96232	16·54983	·50595	·48884	·02983	·02785	92	1·93051	2·08767	·91465	·91007	·31212	·29474
45	15·66814	16·26662	·51452	·49709	·03087	·02879	93	1·82362	1·96234	·91776	·91372	·32503	·30845
46	15·36847	15·97685	·52325	·50553	·03197	·02978	94	1·72831	1·84522	·92053	·91713	·33740	·32234
47	15·06305	15·67908	·53214	·51420	·03313	·03083	95	1·64619	1·73887	·92293	·92023	·34878	·33599
48	14·75208	15·37431	·54120	·52308	·03436	·03195	96	1·57820	1·63942	·92491	·92312	·35874	·34975
49	14·43551	15·06224	·55042	·53217	·03566	·03313	97	1·52480	1·54631	·92646	·92584	·36694	·36360
50	14·11352	14·74322	·55980	·54146	·03704	·03439	98	1·48815	1·46233	·92753	·92828	·37277	·37700
51	13·78608	14·41713	·56934	·55096	·03851	·03574	99	1·43605	1·38359	·92905	·93057	·38137	·39040
52	13·45425	14·08456	·57900	·56064	·04006	·03717	100	1·36660	1·29352	·93107	·93320	·39342	·40689
53	13·11804	13·74564	·58880	·57052	·04171	·03869	101	1·34601	1·18638	·93167	·93632	·39713	·42825
54	12·77812	13·40139	·59870	·58054	·04345	·04031	102	1·23955	1·07204	·93477	·93965	·41738	·45350
55	12·43500	13·05178	·60869	·59072	·04531	·04204	100	1·07469	·95359	·93999	·94310	·45307	·48275
56	12·08888	12·69900	·61877	·60100	·04727	·04387	104	·77105	·82410	·94841	·94687	·53549	·51909
57	11·73952	12·34450	·62895	·61133	·04937	·04581	105	·32363	·48544	·96145	·95674	·72639	·64410

Annuities, although not in so marked a degree, nor to the same extent as in the simple Mortality Tables. If money made no interest, it is plain that the value of Anuities, and the numerical expression in the Expectation Tables or Mortality Tables of Collective Intensity, would be identical, and under that aspect Annuities would have a maximum value. Again, if money could realize an infinite amount of interest, Annuities would then be at a minimum value, and have the same expression for every Table of Mortality and every age in those Tables. To illustrate this, suppose money could realize 100 per cent., or always double or replace itself in the course of a year; and starting with unity, before the expiration of the first term of the annuity a new fund would have formed itself capable of meeting the annuity, and leaving exactly the original unit with which the start was made, ready to enter on a second term of the annuity in the same manner, and so on *ad infinitum*. Under such an aspect, no matter what Table of Mortality was employed, the values of annuities would differ but little, as unity would invariably be capable, from the interest realized only, of meeting every payment for an absolute term of years. It is therefore evident that the values of annuities involving the discount of money will always shew less distinction between different Tables of Mortality than the Tables themselves will shew; and that the higher the rate of interest, the less distinction is observable between the annuities of different Tables, as well as less difference between the values of annuities at various ages for the same Mortality Table.

On reference to page 33, it will be seen that the difference of Expectation between the Rural and City Districts at age 30 is 14·442 per cent.; but a comparison of the values of Annuities at that age for the same Districts, as given at page 112, will shew a difference of only 9·729 per cent. The following Abstract will give a concise view of the relative values of the two expressions:—

Age.	Expectation of Life in		Excess per Cent. in Favour of Rural Districts.	Value of Annuities, Three per Cent.		Excess per Cent. in Favour of Rural Districts.
	Rural Districts.	City Districts.		Rural Districts.	City Districts.	
20	45·3550	40·0148	11·774	22·78605	21·29054	6·563
40	30·9724	26·0873	15·772	18·60452	16·45861	11·534
60	16·6524	13·7685	17·318	11·85797	10·18722	14·090

Again, for reasons precisely similar, less distinction will be found to exist between the values of Annuities for various ages in the same Table, than between the Expectations

of Life for those ages; for example, the difference of Expectation between ages 30 and 60 in the Rural Districts is 21·7549 years, or nearly 57 per cent.; but the difference between the values of Annuities for those ages in the Rural Districts is 9·2097, or about 44 per cent. Like results will also be found for other ages, no matter what Table of Mortality be employed: taking the general results for the Three Districts for ages 50 and 70, the difference of Expectation will be found to be 11·9863 years, or about 54 per cent.; but the difference in the values of the Annuities for those ages is 7·1460, or 46 per cent. The difference in this instance is however less than in the former, on account of more proximate and more advanced ages being taken; but with ages less proximate and less advanced, the difference will exceed that in either of the preceding cases. Let ages 10 and 50 in the Rural Districts be compared, and the difference of Expectation will be found to be 56 per cent., but the difference in the value of Annuities is only 37 per cent.

From these remarks respecting the relative values of Annuities, and the Expectation of Life in various Mortality Tables, it is not to be considered that practically it is a matter of indifference which Table may be used as a basis for calculations for the guidance of a Society. The object of these remarks is intended to lead to quite the opposite conclusion, and to prevent those who are not thoroughly versant with such subjects from hastily adopting any given Table, simply because the money test, by which it is generally brought into comparison with other Tables, shews but little difference. The success of every Friendly Society, and other Institution dealing in Life Contingencies, depends in a great measure on the proper investment of its funds; and although Annuities by two different Mortality Tables may apparently approximate to nearly equivalent values, still, before all the conditions of each Table are practically determined, the accumulation of interest as presumed on in the construction of the Tables, will ultimately realize the maximum difference which is found to prevail between the Expectation of Life for the respective Tables.

The following are the values of Annuities at 3 per cent. as given at page 112, and also according to the Carlisle Table, Mr. Ansell's Table, and the Northampton Table.

Age.	ENGLAND AND WALES.				SCOTLAND.	Carlisle.	Ansell.	Northampton.	Age.
	Rural Districts.	Town Districts.	City Districts.	Rural, Town, & City Districts.	Rural, Town, & City Districts.				
20	22·78605	22·18086	21·29054	22·39981	22·04167	21·694	20·4602	18·6385	20
40	18·60452	17·01150	16·45861	17·90117	17·56000	17·143	15·6673	14·8476	40
60	11·85797	10·12786	10·18722	11·27757	11·18877	10·491	9·8583	9·7774	60

To those desirous to inquire minutely into the relative values of Annuities for the different Tables given in this Paper, and the Tables of Mortality hitherto in use, a careful consideration of their respective bearings will be important; for as Annuity Tables are the foundation on which all the subsequent Monetary Tables are built, their peculiarities must affect the whole structure. This will be markedly seen on inspection of the Table for Deferred Annuities at page 113. According to that Table, at age 30 the value of a Deferred Annuity of £1 per annum, to commence forty years hence or on attaining age 70, is, for the Rural, Town, and City Districts, 1·13398, and the value of the same sum according to Mr. Ansell's Table is only ·6764. This is a most remarkable distinction, and of vital importance to Friendly Societies; for although the present results for age 30 shew only an excess of value in simple or Immediate Annuities of less than 13 per cent. above those given by Mr. Ansell, yet in the Deferred Annuity at the same age there is an excess of 69 per cent. It is under such circumstances as these, where the improvement of money at interest magnifies results, that serious blunders in the adoption of an erroneous Mortality Table will be apt to prove hurtful to the interests of a Society.

Few Friendly Societies granting Deferred Annuities have yet survived long enough to suffer from the effects of so serious an error; but the above illustration points out the inevitable ruin which must overtake those Societies at present granting Deferred Annuities, as very few of them exact even so favourable terms as are required by Mr. Ansell's Tables. A further illustration may be obtained of this question, and of how the peculiar result is produced, by reference to Table F, page 28. It will be seen, that of 89360 persons living aged 30, 42367 attained their 70th year of age; that is to say, out of 100 entering a Friendly Society at 30 years of age, and purchasing Deferred Annuities, 47 would be alive at 70 years of age, to be placed on the Annuity List; but Mr. Ansell's Table would provide for 33 only of such persons becoming Annuitants. Or more correctly, out of every 1000 Members entering those Societies at age 30, there would be 147 Annuitants unprovided for; that is to say, 45 per cent. more Annuitants would have to make claims, than would be calculated on by Mr. Ansell's data, and who would therefore be left destitute of any provision for old age.

The melancholy spectacle which such a state of things would produce can be readily imagined. Supposing that at the present time there are only one million members of Friendly Societies, (which is much under the correct estimate,) whose average age is about 30, and presuming that the terms for Deferred Annuities are graduated according to the preceding hypothesis, 470,000 of those persons would attain the age of 70, and nearly one-third would be without any provision for old age. This is only one of the many evils connected with the present condition of Friendly Societies; and although its visitation be more remote, the awful consequences of such a calamity, like every other evil of procrastination, will be irreparable.

At page 114 will be found the value of Temporary Annuities to continue till age 70; and from what has been said respecting Immediate Annuities Absolute for Life, and Deferred Annuities, it must be evident that Temporary Annuities will also partake of the same relative character to the other Annuity Tables referred to.

Since it has been shewn that, according to the results of this inquiry, Annuities are of greater value than given in many other Tables, it must follow that the value of Assurances, or sums payable at death, are of less value. An inspection of the Table at page 115 will shew that at age 30 the value of £100 payable at death is £35 14s. 6d. in the Rural Districts, £39 5s. 11d. in the Town Districts, £41 13s. 9d. in the City Districts, £37 8s. 4d. in the Three Districts combined, and £38 13s. 6d. according to the value of life in Scotland; while, according to the Carlisle Table of Mortality, the value of the same sum would be £40 2s. 7d., by Mr. Ansell's Table £44 2s. 7d., and by the old Northampton Table as much as £47 16s.

Again: the annual premium at age 30 for an Assurance of £100 at death will, according to the Table at page 116, be £1 12s. 5d. for the Rural Districts, £1 17s. 9d. for the Town Districts, £2 1s. 8d. for the City Districts, £1 14s. 1d. for the Three Districts combined, and £1 16s. 9d. for Scotland; but the annual premium according to the Carlisle Table is £1 19s. 0d., by Mr. Ansell's Table £2 7s. 1d., and by the Northampton Table £2 13s. 4d. Nothing beyond the most general view of the various Tables is proposed to be here taken, as the remarks formerly made respecting the Tables of Mortality themselves will point out the various modifications which the results must undergo in their application to monetary purposes.

At page 117 will be found the Temporary Annual Premiums payable until age 70, to assure a sum payable at death, whenever that may happen, for each of the Districts. And at pages 118 and 119 will be found the probabilities of living for one year and of dying in one year for each District. As these form elements in the calculations of the rates or premiums for Allowances during Sickness, they are simply inserted as a check upon the calculations.

The next Table to be brought under notice is that at page 120, and represents the single premium necessary to provide an allowance of £1 per week during Sickness or Incapacity for Labour up till the age of 70. All the Tables here given are meant to be illustrative of the true bearings and risks of Friendly Societies; and the age of 70 has been fixed on in the present instance, and in the other Tables of Temporary Premiums, because it is an age usually adopted in calculations for Friendly Societies, and will therefore admit of easy comparison with other results on the same subject.

As no attempt has been made in this Paper to enter into the general principles of Vital Statistics, or to discuss the methods and formulæ most applicable to questions of Life

Contingency, those desiring information on such points had better consult the standard works on the subject; but the calculations in reference to the benefits offered by Friendly Societies being limited to the term of 70 years of age, and as it will be necessary in practice to have tables for other terms of life, it may be convenient for reference to give the formulæ by which the results at page 120 were obtained.

Let a = the Average Amount of Sickness to each individual for the year immediately following any given age, as given in Table V;

b = the present value of £1 due six months hence; and

Let $a \times b = x$; also let

p = the probability of a life of the given age living one year; and

c = the present value of £1 due one year hence; and

Let $p \times c = y$; then if

z is made to represent the present value of £1 per week during Sickness, from any given age up to an older age—say 70, the successive values for the z representing each age are found under the following expression:—

$$z_n = (\lambda z_n + 1 + \lambda y_n) + x_n$$

And if θ is made to represent the terms at the respective ages in page 114,

$\lambda z_n - \lambda (1 + \theta)$ will give the Annual Premium for an allowance of £1 per week during Sickness or Incapacity for Labour, as set forth in the Table at page 121. In that Table both the annual premium and the benefit are understood to cease on attaining 70 years of age, or sooner in the event of death.

The Tables referred to are calculated on the supposition that the various payments are to be made annually; but it is well known that Friendly Societies rarely make any payments at so remote periods. For strict practical purposes, Tables involving the consideration of Annuities payable in monthly or weekly instalments would be better fitted; but as the object of this Paper is to furnish data illustrative of the condition of those Societies and of the nature and extent of the risks undertaken by them, rather than to give practical details for their guidance, further Tables have not been inserted.

It is obvious from the remarks already made in regard to Table V, that the Premium for an Allowance in Sickness, according to the results of this inquiry, must be higher than those of former Tables. As Mr. Ansell's information on this subject is the most deserving of attention, any comparison will be limited to the values given at pages 133 and 134 in his interesting Treatise. At age 30 the value of £1 per week during Sickness, up till attaining age 70, is £30·0958; but according to the results at page 120, it is £39·7176 for the

Rural Districts; £46·3904 for the Town Districts; £40·8181 for the City Districts; £43·9833 for the Rural, Town, and City Districts combined; and £37·0322 for Scotland. These, although shewing a very great difference from the values given by Mr. Ansell, are still not greater than might be expected after a careful consideration of Table V, and the remarks made in the preceding pages on that Table. It has been stated that the values of Annuities calculated from different Mortality Tables will always shew less difference than the Mortality Tables themselves; but the same feature does not present itself in connection with Sickness Tables. Two different Tables on the plan of Table V might indicate precisely the same ratio of Sickness at each age, and yet the value of a Sick Allowance calculated for the one Table might differ widely from that for the other.

In the Annuity Tables two elements only affected the results—the Rate of Mortality, and the Rate of Interest; but three elements affect the Sickness Tables—the Rate of Mortality, the Rate of Interest, and the Rate of Sickness. It has been shewn that the Rate of Mortality does not necessarily increase with an increase in the Rate of Sickness; and therefore two classes of the population may be influenced by the same or nearly the same degree of Sickness, and yet be subject to very different Rates of Mortality. Keeping this in view—suppose there are two Sickness Tables, A and B, having the same or nearly the same Rate of Sickness at each age; but that the population of Table A is subject to a high Rate of Mortality compared to Table B;—it is evident, that although each individual of the same age in both Tables would in the course of the same year of life experience the same degree of sickness, yet each person under Table B would be subject to a greater amount of sickness over the whole duration of his life, and for the simple reason that his expectation of life is greater. Take any number of persons—say 100, on the former Table at 30 years of age, and suppose their Expectation, or, for greater exactitude, their Equation of Life, to be 30 years; one-half only of those lives would live to attain 60 years of age: but if on the other Table the Equation of Life were 40 years, one-half of the same number would not be dead till 70 years of age, a considerable portion of which would be subject to an increased ratio of Sickness in the decennial period following age 60. It happens that there is an actual case in point to illustrate this hypothesis. The Rural Districts of England and Wales, and the Average Results for all Scotland, shew almost exactly the same Amount of Sickness in the aggregate over the whole period of forty years from age 30 to 70, differing by less than two-tenths of a week's Sickness; the amount in the

Rural Districts of England and Wales being . . .	121·1448 weeks
And in the whole of Scotland	121·3164 do.

But the Equation of Life for the former at age 30 will be found at page 89 to be 40·813

years, while for the latter it is only 37·478 years, being a difference of 3·335 years. And therefore, although there is no greater Amount of Sickness in the Rural Districts of England and Wales than in Scotland generally, still the value of a Sick Allowance in the former is greater than in the latter. At page 120 it will be found to be at age 30 for the

Rural Districts of England and Wales, being . .	£39·7176 ; but for
The whole of Scotland only	£37·0322

It is therefore evident that the Rate of Sickness is not of itself a sufficient index to the rates of premium that may be deduced therefrom. At page 98 it was shewn that the excess of Sickness in the present results above those by Mr. Ansell was 21 per cent., but the values for Sick Allowance, quoted in the preceding page, shew a difference of above 31 per cent. The feature, therefore, which was characteristic of Annuity Tables—of approximating nearer to equivalent values than the Mortality Tables from which they were deduced—does obviously not distinguish Sick Allowance Tables.

There is another feature connected with Tables of the Rates of Sickness, which will affect their money-values, independently of the influence of the Rates of Mortality, and that is the graduation or distribution of Sickness over the various periods of life. It might happen that two Sickness Tables gave the same Amount of Sickness within a given period of years, but that in the one Table it was more uniformly spread over the various terms of life; not shewing, as in the other Table, a very low Rate of Sickness at the younger ages, and a very high rate at advanced ages. This circumstance, although the Rate of Mortality in both Tables were the same, would occasion a difference in the value of Sick Allowances—and for two reasons; first, because the bulk of the Sickness in the one Table was deferred till the advanced ages, those persons dying before reaching those ages would experience a minimum amount; and second, on account of the Money Liabilities also being deferred, the investment of the early premiums would accumulate at interest. An inspection of the second Abstract, given on page 96, and the Table at page 98, will shew that such a relation exists between Mr. Ansell's Table and the general results for this inquiry; the Sickness in his Table being more uniform, and shewing less disparity for the various ages, while the Highland Society Table runs almost parallel over the whole term of life, from 20 to 70 years of age, with the results for the three Districts

The following Abstract will shew the comparative values of an Allowance of £1 per week in Sickness, up till age 70 :—

Age.	Mr. Ansell's Table.	ENGLAND AND WALES.				SCOTLAND.	Age.
		Rural Districts.	Town Districts.	City Districts.	Three Districts Combined.	Three Districts Combined.	
20	27·0881	34·68519	39·80233	35·41518	37·80606	32·7979	20
30	30·0958	39·71760	46·39042	40·81807	43·98326	37·0322	30
40	34·3204	46·56296	55·56052	46·00568	49·66860	44·1712	40
50	38·7078	53·45831	62·31153	50·16440	55·28222	51·8728	50
60	39·2316	55·15634	61·85428	42·69764	55·23260	51·5541	60

The important effect of the above differences on the stability and permanence of a Society is obvious. The distinction which has been observed in respect of single payments or premiums, will also be found to prevail in the annual premiums, as given at page 121: and the following abstract will give a general idea of the merits of the various tables. The annual premium, as well as the sick allowance, will also terminate in this case on attaining 70 years of age.

Age.	Mr. Ansell's Table.	ENGLAND AND WALES.				SCOTLAND.	Age.
		Rural Districts.	Town Districts.	City Districts.	Three Districts Combined.	Three Districts Combined.	
20	1·3206	1·51649	1·76190	1·62891	1·67184	1·4716	20
30	1·6718	1·91441	2·31954	2·12238	2·16104	1·8552	30
40	2·2731	2·63176	3·31129	2·82968	2·88011	2·6067	40
50	3·3318	3·93305	4·87185	3·94155	4·16193	3·9639	50
60	5·4990	6·56278	7·76910	5·36326	6·70497	6·3417	60

The preceding observations will be sufficient to point out the leading features of the Sickness Tables, and to suggest the proper modes of application to the practical uses of Friendly Societies. It is not expected that the present Paper will obtain any thing like a general circulation among the members of those Societies, or a different style and mode of treating the subject would have been adopted. All that has been contemplated is such an exhibition of the facts and data as will afford a means to determine the various contingent risks on which the liabilities of Friendly Societies depend, and in such a manner as to be intelligible to those taking an interest in Vital Statistics; but as in addition to the prizes given, as mentioned at page 13, a further inducement was held out to parties furnishing data, by a promise to publish the results, and present copies to every contributor of data,—and as the Paper will have a circulation to that extent at least,—it is proposed to add a few remarks bearing on the present condition of Friendly Societies.

One of the difficulties in the way of obtaining information was the fear, on the part of the members, that its publication might prove hurtful to particular Societies; and it was therefore necessary to come under a promise, that whatever use was made of the information, no individual Society would be referred to. But that a general idea may be formed of the condition of Friendly Societies, in respect to the adequacy of their contributions for the benefits held out by them, fifty Societies have been selected at random; and in order to make the illustration more simple, one period of life only, age 35, has been fixed on, and the rates in each of the fifty Societies in question examined and graduated to represent an allowance of £1 per week during sickness, up till age 70—an annuity of £13 per annum for life after 70—and a sum of £10 payable at death, whenever that may happen. The corresponding rates having been determined in each Society for the above scale, they were found to average only £1 11*s.* 5*d.*; but in many of the Societies an Entry Money is paid, and for the same age it was found to average £1 2*s.* 9*d.* As the value of the Temporary Annuity at the same time of life is 17·88172, the above entry money will be equivalent to an annual contribution of about 1s. 3d., which, added to the other item, will render the whole annual contribution £1 12s. 8d. The entire inadequacy of such a contribution to provide for the benefits offered must be apparent: page 121 will show, that for the single benefit of £1 weekly, during sickness, the annual contribution should be £2 10s. 5½d.; and on examination of the respective Tables it will be seen that the contribution adequate to provide for the three benefits offered is £3 9s. 8d. annually, or more than double the actual amount collected. It is a most lamentable condition, in which to find Societies aiming at designs so benevolent and praiseworthy. It may seem strange that they should endure for even a year or two; but if the amount of sickness at page 98 be examined, and the young period of life at which members generally enter borne in mind, it will appear that they may survive at least 25 or 30 years before their insecurity may become evident to an ordinary observer. Members are generally satisfied, in the first periods of a Society, to find that the income has exceeded the expenditure, and left a respectable balance; losing sight of the great accumulations which are necessary to meet the future liabilities incidental to their increasing years and infirmities. As a Society advances, its income will invariably, in connection with a given number of members entering at a particular age, decrease with the increase of its expenditure. Suppose a Society to commence with a given number of members, all 35 years of age;—in 25 years afterwards the income from those members, through the deaths that take place in that period, will have decreased to seven-tenths of its original amount; while its expenditure on sickness will have trebled, and the members fast approaching a time of life at which the expenditure will be ten times the original sum. This is a state of things for

which the contributions of a Society should make amply provision; but, unfortunately, few have so considered the subject as to protect themselves against such vicissitudes.

But perhaps the most simple and correct mode of looking at the liabilities of those Societies is to consider the most improved class of them, in which separate contributions are made for each benefit offered; and in this instance also the contributions answering to age 35 only will be spoken of.

No doubt, Societies may seriously err by having badly graduated Tables; and it might happen that the contributions at one period of life are abundant, while at other periods they may be quite inadequate; but as a very general view only is to be taken here of the subject, reference is made to the Tables themselves for information on the graduation of rates.

A distinction in the contributions for the various benefits offered, is a valuable improvement in the management of such Societies; and accordingly collateral improvements do also progress with it; for in this class of Societies it is found that the annual contribution for a sickness benefit only is nearly equal to that of the other group of Societies referred to for the whole three benefits. To secure £10 at death, the contribution is £1 10s. 10d. yearly, which is only 1s. 10d. less than the yearly contribution in the other Societies for all the benefits combined; but it has already been shown, that the real risk incurred from sickness would, from members entering at age 35, require a payment of £2 10s. 5d. annually.

No doubt, many Societies are on a much better foundation than the above statement would seem to indicate; but it has been thought the better course to refer to the Societies as a class. A subdivision, however, of the same group was found in a better condition, and the annual payment was about £2 for £1 per week in sickness. No Society had its sickness contributions equal to the rates in the preceding table; but the payments in one Society were much more than the others, having been £2 6s. 11d. annually. The necessity for a general revision of the Sickness Rates and Contributions in Friendly Societies is therefore obvious.

With respect, however, to those Societies distinguishing the rates of contributions for sums of money payable at death, or what is generally termed Assurances at Death, a better state of things is found to exist. The contribution on the average of those Societies is 4s. 7d. annually for £10 payable at death, while the exact risk, according to page 117, requires a payment of 4s. 4d. This latter sum does not include any thing for expenses of management. If it were the practice for those Societies to keep distinct funds for each of the benefits offered, and never to allow the contributions for assurances at death to be mixed up with the monies arising from other sources, little danger need be feared by those making a provision for death;

but unfortunately such a separation of the funds is rarely observed, and the general result is, that the Assurance Fund is absorbed by the deficiencies in the other business of the Society. It may be here necessary to remark, that although the preceding sum is quite adequate to meet the contingencies from death on the average of all Societies, yet there are Societies in particular localities, the members of which follow unhealthy occupations, and such a sum would not in those instances be sufficient to meet all the liabilities from death.

The most remarkable deficiency yet observed, among even those Societies having graduated rates as well as distinct contributions for the various benefits offered, is in the contributions which provide for an annuity after attaining a given age. At page 113 will be found the values of Deferred Annuities, to commence at age 70; and the Annual Premium for the same Annuity may easily be obtained from the expression—

$$z\,\lambda\,\delta - \lambda\,(1 + \theta)$$

in which δ represents the terms found at the respective ages in page 113. Accordingly, at age 35, the Annual Contribution or Premium for an Annuity of £13 a year after attaining the age of 70 is 18s. 10d; but the rate in some Societies is as low as 8s. 11d., and an average of a number of the best Societies is 12s. 2¾d., while the most favourable rate in any individual Society in the same group was 14s. 4½d. The nature of this risk has already been referred to at page 126; and the remarks there made should be carefully considered by every one interested in the progress of Friendly Societies, as no error carries with it such distressing and melancholy consequences, as that which aggravates the cares, anxieties and infirmities of old age, and in the decline of life throws destitute those whose youthful industry enabled them to live in comparative independence.

Another feature of Friendly Societies, particularly the older class of them, deserving of attention, is a want of graduation in the premiums or rates of contribution. This feature, although generally associated with inadequate rates, is not of itself evidence of instability, but is rather a principle which is non-equitable to the Members. The better constituted Friendly Societies have long discontinued such a plan, and have now Tables graduated according to age; but as there are still many Societies not so improved, it is proposed to introduce a few observations on the nature of this error, which is most strikingly developed in the management of Odd-Fellow Societies.

Odd-Fellow Societies, although not numerically of the same importance with Friendly Societies, are still by no means an insignificant body of the community. What is termed the Manchester Unity contains at the present time, in its various ramifications over the

kingdom, about 400,000 Members, and its income is above a quarter of a million annually. The Members are stated to have increased, during the last few years, at the rate of 25,000 per annum.

Odd-Fellow Societies are peculiar in their constitution, and differ in some respects from Friendly Societies; but so far as the subject of Life Contingencies is concerned, they present the most objectionable features of the worst conditioned Friendly Societies, and generally the preceding remarks will apply with greater force to them, so far as the question of stability relates. Every Lodge under what is termed the "Order of Odd Fellows," is, by the 32nd General Law, compelled to exact the following rate of Initiation or Entry Money from all members on admission, who must not be under the age of eighteen, nor above forty.

Under	35	years of age				£	1	1	0
Above	35	and under	36				1	13	0
„	36	„	37				2	8	0
„	37	„	38				3	4	0
„	38	„	39				4	2	0
„	39	„	40				5	5	0

Between 18 and 35 years of age, individual Lodges sometimes vary the Entry Money, but they must always be within the limits here assigned; (see the Laws and Regulations of the Independent Order of Odd Fellows, as revised and corrected agreeably to the Resolutions of the Grand Committees, and adopted by the A. M. C. held at the Isle of Man, June 1841.) Of late some Lodges have proposed improvements in the relation between the Contributions and Benefits; but the following are the Rates as abstracted from the Regulations of several Lodges, and may be regarded as the general scale adopted. In addition to the Entry Money already quoted, each Member must make a weekly Contribution of 4d., or a monthly Contribution of 1s. 4d., being at the rate of 17s. 4d. per annum. In lieu of those payments, the Members are promised, in addition to many other privileges, the following benefits:—

An Allowance of . .	£	0	10	0	per Week during Sickness.
A Sum of		10	0	0	at Death of Member.
And a Sum of . . .		6	0	0	at the Death of a Member's Wife.

Assuming that the allowance to the Member's wife is thrown out of the question, and also that the allowance during Sickness should be discontinued after attaining 70 years of age—which is to view the liabilities at a very reduced rate—at the age of 18 the preceding Tables would make the annual Contributions 18s. 7d.; but the actual Contribution is

17s. 4d., to which has to be added one shilling, the value of the Entry Money, in yearly payments, making the total Contributions 18s. 4d., and differing but little from the true amount required. But take the case of a Member entering at 35 years of age, and the non-equitable character of those Societies will immediately appear. The Entry Money at that age is equivalent to an annual payment of 1s. 9d. yearly; to this add the Contribution of 17s. 4d., and the full yearly payment will equal 19s. 1d; but the preceding Tables show that the Contribution required at the same age is £1 9s. 4d. This striking disparity places the injustice of the regulation beyond all sanction. To render the preceding scale of Entry Money equitable, those admitted at age 35 should pay £11 12s. 1d. instead of £1 13s.; so that, in fact, the practice of Odd-Fellow Societies holds out a bribe or bonus to one class of Members of £9 19s. 1d. A similar remark is applicable to the admission at all other ages between 18 and 35; and notwithstanding the obvious injustice of such a system, Odd Fellows seem to possess a peculiar pertinacity to adhere to the false and insecure plans of old Benefit Clubs, and which have long since been abandoned by every Friendly Society of any pretensions or importance. Although many Lodges and Districts have taken up the subject, very little improvement is to be expected till the near dissolution of the Societies excite serious attention; but that the danger of their position, and the non-equitable mode of payment is already known to a considerable extent, is evident from the following extract from a Report, recently made by a Sub-Committee of a District containing 5000 Members.

"So long as an influx of young members shall continue, the funds may appear to maintain a position which, to the eye of the inexperienced, may be altogether delusive. But when the original members shall have passed the meridian of life, and have begun to experience the infirmities of old age, the demands made upon the funds will then necessarily be so much larger. The stability of the Institution will come then to be fairly tested." And again they say, "If the present system is permitted to continue, which seems not only to involve within itself the elements of dissolution, but is constructed on principles which act unfairly towards the younger portion of the Members—thus, for example, a young man of eighteen years is charged as much for his initiation as a man of thirty, while all the time the Entry Money of the former has been accumulating at compound interest; thus evidently showing that the Entry Money at eighteen is in reality nearly double of what it is at thirty, though undoubtedly it ought to be the reverse. . . That it is unjust, and likewise unsafe, to the well-being of a Benefit Society, that each Member should pay an equal sum, whatever his age may be at the time of his entry."

It has been stated, that to render it equitable to members entering at ages 18 and 35 respectively, those at the latter age should pay £1 9s. 4d. annually instead of 19s. 1d. as at present; but it is not to be supposed that even this sum would render Odd-Fellow Societies safe, for it makes no provision for Sickness after 70 years of age; but an inspec-

tion of the Table on page 105 will shew that the amount of Sickness after that period of life is equivalent to about 43 per cent. of Permanent Sickness, which would at age 35 require an additional contribution of 16s. 2d. yearly, making the whole £2 5s. 6d. instead of 19s. 1d., or considerably more than double. The inevitable dissolution of the Order of Odd-Fellowship, under such circumstances, is certain. Presuming that no change in the contributions and benefits should take place, and assuming the average age at admission to be 31, which is near the truth, and taking the total number of members in the Manchester Unity at 400,000, a donation or gift of no less than £9,135,000 would be required to enable the Order to meet all its liabilities; and that is taking it for granted that the affairs of those Societies are conducted with proper regard to economy, and the funds invested to yield at least 3 per cent. compound interest. But there is much reason to fear that neither one nor the other of those conditions is fulfilled, (see an able Address by Mr. Thomas Barlow to the West Mendip Friendly Society); and the following Abstract from the Report of the Sub-Committee of the Glasgow District of Odd Fellows, M. U., September 1843, will show that, even in a place proverbial for its economy in other matters, there is a lavish expenditure in the management of those Societies. In reading the following quotation, it will be necessary to bear in mind that the number of members in the district being 5000, the annual income must be about £4330:—

"The first thing to which attention is called is the expense of opening, and of Regalias—an expense of, on the average, £16 8s. 4½d., to which may be added £7 for Dispensation, Lecture Book, &c., and Lodge Chest—making £23 8s. 4½d., the average of opening a Lodge.

"The District and Delegate Expenses being, as shewn, 1s. 6d. per member, which, in the Glasgow District, with its 5000 members, is at the rate of £375 paid for District Expenses and Delegates in each year.

"The sum of 2s. 6d. paid for the Surgeon to attend members is, over the whole District, at the rate of £625 in the year. Current Lodge Expenses is returned on the average of 2s. per member, being £500 paid in each year for Lodge Room Rent, &c.; being in all £1500 paid in the Glasgow District for the working of the Order—a sum which will soon convince the most incredulous that the benefits of the Order will soon cease if such an expenditure is allowed to continue."

It would seem that each Lodge, by a set of bye-laws, can regulate its own weekly contributions; and as an example of the curious errors into which those who are not thoroughly acquainted with such subjects will occasionally fall, it may be mentioned that one of the Lodges referred to in the preceding Report, apprehending the danger of its position under the general scale adopted by the Order, proposed new terms with a view to greater safety; and it oddly enough happens that the new rates produce a greater

deficiency than the old, to the extent of 5s. 8d. annually to each member at the age of 35; and proportionate deficiencies are found at other ages.

It is evident that the Order of Odd Fellows stands in much need of improvement; and considering the many elevated names which are said to be enrolled as members, it is remarkable that some gentleman of influence and scientific attainments should not before this have given attention to the lamentable condition in which his too confiding brethren of the Order are placed, and have done something to raise the Unity to the common level at least of the Friendly Societies throughout the kingdom.

There is another class of Societies which attempts to carry out the general principles of Friendly Societies; but they are, like the Odd-Fellow Societies, modelled after the very rudest shape in which Benefit Clubs were formed fifty years ago: and so far as relates to their contributions and benefits, almost nothing further is necessary to be stated. "Rechabite" is the name by which those Societies are known; and every member has to come under an obligation to abstain from intoxicating liquors, and to discountenance by every lawful means in his power the drinking usages of society.

The terms on which members are admitted are according to the following scale:— entry money at age 16 is 5s., and at age 40 it increases to £2 10s.; the monthly contribution for all ages is 1s. 4d., or 17s. 4d. annually. The benefits promised are an allowance of 10s. per week in sickness, and a deferred annuity of 5s. weekly after 70 years of age. To young members entering the Rechabite Societies, or Tents as they are termed, at the age of 16, the actual premium for the above benefits, making allowance for entry money, should be £1 2s. 8d. annually; at age 40, also allowing for entry money, the annual premium should be £2 10s. 9d.

It will thus be seen, that by the youngest member at sixteen there is an ultimate loss of 5s. 4d. annually, and by the member aged forty there is a loss of £1 13s. 5d. annually, provided that it were possible to sustain such losses; but it is needless to add, that permanence is not to be expected with Societies so constituted. Not only do the Rechabite Societies, in common with Odd-Fellow Societies, perpetrate an injustice on the younger members by the above disparity in the payments; but that injustice is further augmented by levying a uniform tax of 3s. yearly, without distinction of age, for funeral money, the sum of £10 being payable on the death of each member. The discouragement given to drinking usages, and the practice of temperance enjoined by Rechabites, is deserving of every support, and is well calculated to increase the comforts and elevate the moral and political condition of the working class; but it is to be regretted that the monetary foundation on which the Societies are built should be destined to effect their overthrow at so early a period.

A class of Societies, of which there are about two thousand in the kingdom, pass under the name of the Courts of Foresters, and their object is also to provide against sickness and death; members are admitted between the ages of 18 and 38, on the same terms, and participate to the same extent in the benefits offered. It is therefore unnecessary to add any thing to what has already been remarked of Odd Fellows and Rechabite Societies, as the same observations are equally applicable to all.

The illustrations of the condition of the various grades of Friendly Societies, given in the preceding pages, have been made as general as possible, in order to ensure their being readily understood by the members to whom they were more particularly addressed. It will be necessary, in every instance where any practical application is made of the facts presented, to use every caution in the selection of those examples which strictly belong to the case in point; and it is hoped that the marked differences which have been shown to prevail between the Rates of Mortality and Sickness, under the many modifications as to condition and peculiarity of employment and rank in society, will be a sufficient guarantee against the indiscriminate use of the general results for the government of individual classes whose circumstances differ widely.

Should the present contribution in any degree advance the science of Vital Statistics, and place the provident and self-supporting institutions of the people on a more permanent foundation, the highest wish of the writer, in venturing on so important a subject, will be consummated.

APPENDIX.

NOTE I.

EXPECTATION OF LIFE.

Ages.	Milne. Carlisle, A.D. 1779—1787. Both Sexes.	Deparcieux. Tontine Nominees. Both Sexes.	Demonferrand. France, A.D. 1817—1832.		Assured Lives.		Ages.
			Males.	Females.	Equitable. Davies.	Amicable. Galloway.	
10	48·82	46·83	47·00	47·42	48·83	.....	10
15	45·00	43·50	43·58	43·66	44·81	.....	15
20	41·46	40·25	40·00	40·08	41·06	.....	20
25	37·86	37·17	37·25	36·83	37·44	37·805	25
30	34·34	34·08	34·00	33·41	33·98	33·681	30
35	31·00	30·92	30·50	30·00	30·66	29·721	35
40	27·61	27·50	27·00	26·58	27·40	25·944	40
45	24·46	23·92	23·41	23·16	24·10	22·365	45
50	21·11	20·42	19·91	19·58	20·83	18·994	50
55	17·58	17·25	16·50	16·25	17·85	15·832	55
60	14·34	14·25	13·25	13·16	15·06	12·878	60
65	11·79	11·25	10·58	10·50	12·35	10·264	65
70	9·18	8·67	8·08	8·08	9·84	8·113	70
75	7·01	6·50	6·16	6·16	7·52	6·345	75
80	5·51	4·67	4·75	4·75	5·38	4·884	80

Ages.	Milne.					Duvillard. France. Both Sexes.	Price. Northampton. A.D. 1735–1780. Both Sexes.	Ages.
	Sweden and Finland, A.D. 1776—1795.			Montpellier A.D. 1772—1792.				
	Males.	Females.	Both Sexes.	Males.	Females.			
10	45·03	47·28	46·16	44·12	46·77	40·80	39·78	10
15	41·51	43·74	42·63	40·06	43·02	37·40	36·51	15
20	37·86	40·04	38·96	36·52	39·45	34·26	33·43	20
25	34·48	36·44	35·47	33·49	36·32	31·34	30·85	25
30	31·22	33·00	32·12	30·43	33·34	28·52	28·27	30
35	27·95	29·68	28·82	27·30	30·41	25·72	25·68	35
40	24·61	26·27	25·45	24·06	27·45	22·89	23·08	40
45	21·45	23·03	22·26	21·00	24·44	20·05	20·52	45
50	18·36	19·66	19·03	18·23	21·35	17·23	17·99	50
55	15·39	16·37	15·90	15·53	18·42	14·51	15·58	55
60	12·47	13·18	12·85	13·14	15·73	11·95	13·21	60
65	9·92	10·41	10·19	11·01	13·22	9·63	10·88	65
70	7·87	8·12	8·01	9·02	10·79	7·58	8·60	70
75	6·13	6·38	6·27	7·07	8·44	5·87	6·54	75
80	4·75	4·94	4·85	5·17	6·17	4·60	4·75	80

Note II.

Rural Districts.

Anglesea—Beaumaris, Llanerchymedd, Llansadwrn.

Bedfordshire—Ampthill, Dunstable, Eaton Socon, Henlow, Harrold, Maulden, Oakley, St. Leyds, Renhold, Silsoe, Woburn.

Berkshire—Sunning Hill, Maidenhead, Winkfield.

Buckinghamshire—Aylesbury, Dagnall, Eton, Great Marlow, Great Misenden, Lower Winchendon, Newport Pagnell, Stoke Poges, Weston Turville, Wooburn.

Breconshire—Brecknock, Hay, Llomelly, Tassiny Pridd.

Cambridgeshire—Ickleton, Melbourn, Whittlesford.

Cardiganshire—Yspytty Confin.

Carmarthenshire—Langodock, Pembrey.

Carnarvonshire—Bangor, Carmel, Llandwrog.

Cheshire—Ashton-upon-Mersey, Buglawton, Congleton, Horridge End, Middlewich, Sandbach, Weaverham.

Cornwall—Bodmin, Breaze, Helstone, Kilkhampton, Marazion, Millbrook, North Hill, Church Town, Quethiock, St. Kenerne, C. T., St. Ive, St. Germans, St. Ewe, St. Agnes, Torpoint, Tuckingmill.

Cumberland—Cockermouth.

Derbyshire—Clonn, Cubley, Dronfield, Dale Abbey, Glossip, Middleton, Miller Moor End, Pentrich, Peakforest, Sanley, Thorpe, Walton.

Denbighshire—Llanfair Talhaiam, Llandogla.

Devonshire—Ashford, Bovey Tracy, Broadclist, Bishops Nympton, Chudleigh, Churston Ferrers, Cornworthy, Dodbrook, Great Torrington, Hartland, Holsworthy, Hatherleigh, Hennock, Kingskernell, Kingsbridge, Modbury, Moretonhampstead, Merton, Newton Abbott, Newton Bushel, Northlen, Plymstock, Stokefleming, Totnes, Whitchurch.

Dorsetshire—Hilton, Lyme Regis, Sherborne, Tarrant Munckton, Wyke Regis.

Durham—Burnopfield, Bishop Huckland, Houghton le Spring, Longridge, Monkwearmouth, Sedgefield, Winlaton.

Essex—Arkesden, Chigwell, Castle Hedingham, Dedham, Fordham, Great Baddow, Great Chesterfield, Gestingthorpe, Goldhanger, Hatfield Heath, Leigh, Loughton, Stebbing, St. Osyth, Witham, White Northley, Walthamstow.

Flintshire—Llanhasa, Mold, St. Asaph.

Glamorganshire—Aberayron, Canphilly, Eglurysilan, Gellygear, Llangonoyd, Llanfabon, Pontardylas near Swansea, Lantwit-juxta-Neath.

Gloucestershire—Arlingham, Frampton-on-Severne, John St. Spt. Nily, Lechlade, Newnham, North Verney, Prestbury, Paintneck, Sherborne, Stow-in-the-Wold, Stapeton, Tewkesbury, Tidenham, Winchcomb, Woolaston, Yate, Yatton.

Hampshire—Bitterne, Breamore, Buriton, Burley, Christchurch, Eling, Fordingbridge, Millbrook, Swarthling, Westend, Winchester, Wootton, (Isle of Wight,) West Cowes, I. W.

Hertfordshire—Lemsford Mills, North Mimms, Stevenage.

Huntingdonshire—Deddington, Huntingdon.

Isle of Jersey—St. Heliers.

Kent—Chislehurst, Cranbrook, Queenborough, Seven Oaks, St. Peters, Margate, Wrotham, Woolwich.

Lancashire—Caton, Church Town, Chipping, Dalton, Everton, Hunts Bank, Manchester, Kirkham, Long Ashton, Lathorn, Ribchester, Skelmorsdale.

Leicestershire—Barwell, Markfield, Misterton, Quorndon, Sileby, Whitwich.

Lincoln—Barrowby, Crowland, Deeping, Dorrington, Horncastle, Sleaford, Sutton Wash, South Witham.

Merionethshire—Blamare, Bala, Llwyngwril, Llanfachreth, Llanderfel, Penlyn, Trawsfynydd.

Monmouthshire—Chepstow, Llanfeangel, Pantengue, Ragland.

Montgomeryshire—Llanidloes, Welsh Pool.

Northamptonshire—Kingsthorpe, Kettering, Little Houghton, Peakirk, Peterborough, Wellingborough.

Norfolk—Aylesham, Hainford, Kirkling, Ludham, Melton Parva, Snettisham, Shipsham, Strumpshaw.

Northumberland—(Not stated.)

Nottinghamshire—Carlton, Stapleford.

Oxfordshire—Banbury, Fritwell, Oxford, Steeple Aston.

Pembrokeshire—Begelly, St. Florence.

Radnorshire—Presteign.

Shropshire—Ellesmere, Hodnet, Mensterly, Norton, Rayton, Seluttyn, Whitchurch.

Somersetshire—Bath, Easton, Rutleigh, Chew Stoke, Marsbury, Radstock, Stogumber, Wellington, Wincanton, Washford.

Staffordshire—Ashley, Biddulph, Bursben, Bloxwich, Cobridge, Endon, Hanley, Lone End, Pelsall, Trentham, Wolstanton, Yoxall.

Suffolk—Bungay, Bury St. Edmnnds, Haverhill, Lanshall, Sudbury, Withersfield.

Surrey—Dorking, Godalming, Horsley, Kingston, Richmond, Sandon, Tatesfield.

Sussex—Billinghurst, Compton, Loxwood, Rothersfield, Wilmington.

Warwickshire—Alcester, Berkswell, Halford, Knowle, Polesworth.

Wiltshire—Aldbourn, Chisledon, Corsham, Donhead, East Knoyle, Highworth, Malmesbury, Wootten Basset.

Worcestershire—Longdon, Pershore.

Yorkshire—Bentham, Boonsley, Briggatt, Dukenfield, Driffield, Gildersome, Grassington, Harewood, Hawden, Holmpitch, Headingly, Overblow, Queenshead, Rastrick, Scholes, Stanningly, Steeton, Thorne, Thurstonland.

Town Districts.

Bedfordshire—Bedford.
Breconshire—Crickhowell.
Cambridgeshire—Cambridge.
Cheshire—Astbury and Lanton, Chester.
Cornwall—Camborne, Penzance, Redruth, St. Austell.
Derbyshire—Alfreton, Chesterfield.
Denbighshire—Wrexham.
Dorsetshire—Blandford.
Durham—Stockton, Stockton-on-Tees, Sunderland, South Shields.
Essex—Barking, Chelmsford.
Flintshire—Holywell.
Glamorganshire—Swansea.
Gloucestershire—Cheltenham, Stroud.
Hampshire—Portsea, Southampton, Winchester.
Kent—Deptford, Maidstone.
Lancashire—Ashton, Ashton-under-Lyne, Blackburn, Friargate Preston, (and Town near Manchester).
Lincoln—Lincoln, Stamford.
Middlesex—Fulham.
Monmouthshire—Bedwelty, Pontypool.
Northamptonshire—Northampton.
Norfolk—Norwich, Great Yarmouth, Yarmouth.
Northumberland—Newcastle, Tynemouth.
Pembrokeshire—Pembroke.
Shropshire—Shrewsbury, Wellington.
Somersetshire—Bath.
Staffordshire—Stafford, Stone, Stoke-upon-Trent, Sedgeley, Tamworth, Walsall, West Bromwich.
Surrey—Beaubridge, Dulwich.
Sussex—Brighton.
Warwickshire—Coventry, Nuneaton.
Wiltshire—Trowbridge.
Worcestershire—Bromsgrove, Dudley.
Yorkshire—Bradford, Halifax, Huddersfield, Whitby.

City Districts.

Devonshire—Devonport.
Gloucestershire—Bristol.
Lancashire—Liverpool and Suburbs.
Middlesex—London and Suburbs.
Warwickshire—Birmingham.
Yorkshire—Leeds, Sheffield, York.

Note III.

List of Districts in Scotland.

Rural Districts.

Aberdour.
Borrowstounness.
Catrine.
Ceres.
Coldingham.
Currie
Dalry.
Dunbar.
Dunse.
Rosehearty.
Saltcoats.
Greenlaw.
Turriff.
Kirkmichael.
Alexandria.
Anstruther.
Mauchline.
Musselburgh.
Newburgh.
Stranraer.
Douglas.
Stornoway.
Strichen.
Strathaven.
Thornliebank.
Westquarter.
Preston Pans.
Kilwinning.
Stevenston.

Towns.

Arbroath.
Kilmarnock.
Dalkeith.
Campbelltown.

Cities.

Edinburgh.
Glasgow.
Paisley.
Aberdeen.

INDEX.

ANNUITIES—

Table of Value of Annuities in Rural, Town, and City Districts, in England, Wales, and Scotland, Tables of, . 112—114, 123
Comparison between Tables of Annuities and Tables of Expectation of Life . 124—126
Remarks on the Tables . . 127, 132, 134

ANNUITANTS, GOVERNMENT—

Value of Life among . . . 38

ASSURANCES—

Tables of premiums for the Assurance of sum at Death . . 115—117, 123
Remarks on the Tables . . . 127

ASSURANCE SOCIETIES—

Members of—their position in society—value of their lives 35
Table of the Expectation of Life among . 37

BAKERS—

Tables of Decrements, Mortality per Cent., and Specific Intensity . . 46
Expectation of Life among . . 51
Value of Life among . . . 55

CENSUS—

Correction of the Enumeration of the Population in . . . . 1—3
Want of Unity between Census and Registrar General's Reports . . . 10, 11

CLERKS—

Table of Decrements, Mortality per Cent., and Specific Intensity . . . 44
Expectation of Life among . . 50
Value of Life among . . . 55, 56

DATA, ORIGINAL—

Extent of in this Volume, how obtained, and method of using . . 13—15

DEATHS—

England and Wales,

Sum of Corrected Enumeration of, in the years 1838, 1839, 1840, 1841 . . 4
Tables of . . . 16—23

Scotland,

Tables of Deaths in . 64—71, 79, 84, 85

DISTRICTS, RURAL—

England and Wales.

Tables of Population, Deaths, and Sickness 16, 17
Table of Decrements, Mortality per Cent., and Specific Intensity . . . 25
Comparison of Specific Intensity between Table C and Rural Districts . . 30
The same with Tables D and G . . 31
Table of Expectation . . . 32
Table of Decrements, Mortality per Cent., and Specific Intensity among Labourers . 43
" among the Residue, after abstracting Labourers from Rural Districts . . . 48
Comparison of the Expectation of Life among Labourers in Rural Districts and the Rural Districts generally . . . 49
Expectation of Life among, after abstracting Labourers 51
Average Sickness per annum to each person in 92
Table of Value of Annuities in . 112—114
" Premiums for Assuring Sum at Death in . . 115—117
" Probability of Living one year in . 118
" " of Dying in one year in 119
" Premiums for Sickness in . 120—122
List of Places comprised under the head of . . . 141, 142

Scotland—

Tables of Population, Deaths, and Sickness 64, 65,
Table of Decrements, Mortality per Cent., and Specific Intensity . . . 73
Table of Expectation . . . 77
Average Sickness per annum to each person in 92
List of Places comprised under the head of 144

DISTRICTS, TOWN—

England and Wales.

Table of Population, Deaths, and Sickness 18, 19
Table of Decrements, Mortality per Cent., and Specific Intensity . . . 26
Comparison between Specific Intensity of Table C and that of Town Districts . 29, 30
Table of Expectation . . 32
Average Sickness per annum to each person in 92

DISTRICTS, TOWN, (*continued*)

ENGLAND AND WALES.

Table of Value of Annuities in . . 112
„ Premiums for Assuring Sum at Death in . . 115—117
„ Probability of Living one year . 118
„ „ Dying in one year . 119
„ Premiums for Sickness . 120—122
List of Places comprised under the head of 143

SCOTLAND—

Table of Population, Deaths, and Sickness 66, 67
Table of Decrements, Mortality per Cent., and Specific Intensity . . . 74
Table of Expectation . . . 77
Average Sickness per annum to each person in 92
List of Places comprised under the head of 144

DISTRICTS, CITY—

ENGLAND AND WALES—

Table of Population, Deaths, and Sickness 20
Table of Decrements, Mortality per Cent., and Specific Intensity . . . 27
Comparison of Specific Intensity of Table C with that of City Districts . . 29, 30
Table of Expectation . . . 32
Average Sickness per annum to each person in 92
Table of Value of Annuities in . 112—114
Table of Premiums for Assuring Sum at Death in . . 115—117
„ Probability of Living One Year . 118
„ „ Dying in One Year . 119
„ Premiums for Sickness . 120—122
List of Places comprised under the Head of 144

SCOTLAND—

Table of Population, Deaths, and Sickness . 68, 69
Table of Decrements, Mortality per Cent., and Specific Intensity . . . 75
Table of Expectation . . . 77
Average Sickness per annum to each person in 92
List of Places comprised under the head of 144

DISTRICTS, RURAL, TOWN, AND CITY (*combined*)—

ENGLAND AND WALES.

Table of Population, Deaths, and Sickness, Trades not Classified (Males) . . 22, 23
Table of Decrements, Mortality per Cent., and Specific Intensity, Trades not Classified, (Males) 28
Tables of Expectation . . . 32, 50
Table of Decrements, Mortality per Cent., and Specific Intensity among Clerks . 44
„ Plumbers, Painters and Glaziers . 45
„ Bakers . . 46
„ Miners . . 47
„ Females, Trades not Classified . 57
Table of Value of Annuities in . 112—114, 123
„ Premiums for Assuring sums at Death in . . . 115—117
„ the Probability of living one year . 118
„ „ dying in one year . 119
„ Premiums for Sickness . 120—122

DISTRICTS—(*continued.*)

SCOTLAND.

Tables of Population, Deaths, and Sickness . 70, 71
Table of Decrements, Mortality per Cent., and Specific Intensity . . . 76
Table of Expectation . . . 77
Table of Value of Annuities in . 112—114
„ Premiums for Assuring Sums at Death in . . . 115—117
„ the Probability of living one year . 118
„ „ dying in one year . 119
„ Premium for Sickness . 120—122

DUNDEE—

Table of Expectation—Males and Females 83
Table of the Populations in 1835 to 1844, with sum of Deaths and Mortality per cent. . 85
Mortality Tables calculated for . . 86
Value of Life in, compared with Liverpool and Glasgow . . . 86
Table of Decrements, Mortality per Cent., and Specific Intensity—Males—Trades not Classified 87
Same among Females . . . 88

ERRORS—

In mode of obtaining results in Vital Statistics 40—42

EMPLOYMENT—

Influence of, on Life . 49, 53—55, 60, 82, 101

ENGLAND AND WALES—

Duration of Life in . . . 1—12
Expectation of Life in, Table of . . 8
Comparison between Table in page 8, and the Expectation of Life among Friendly Societies in Rural, Town, and City Districts . 34
Equation and Expectation of Life in, compared 89
Average Sickness per annum to each person in 92
Tables of the Value of Annuities and Premiums for Assuring Sums at Death . 123

EDINBURGH 72
Edinburgh Compositors' Society, its Report 100

EXPECTATION OF LIFE—*See* "LIFE."

FORESTERS—

Society of 139

FORMULÆ—

The Correction applied to the Census of the Population in 1821 and 1841 . . 2, 3
The mode of obtaining the Rate of Mortality per Cent. at individual ages, in the years 1838, 1839, 1840, 1841 . . 4
The mode of obtaining the Rate of Mortality among the lowest classes . . 40
The mode of obtaining the correct Average Mortality of the whole kingdom . 40, 41
The mode of comparing any class of results with general results in which that class is included 52
The mode of obtaining the Terms in the Equation Table . . . 90
The mode of obtaining the Mortality per cent. among those actually sick . . 106
The mode of obtaining the Sickness per annum among those actually sick . . 107

FORMULÆ—(*continued*)
The mode of calculating the Table of Single Premiums for an Allowance during Sickness 128
The mode of obtaining the Annual Premium to secure a Deferred Annuity . . 131

FRIENDLY SOCIETIES—
Value of Life among the members of 33—39
Table of Expectation of Life among Females in Rural, Town and City Districts . 36
Same among Males in Liverpool . . 36
Same among Males of Sixteen Trades in Rural Districts 36
Comparison between the Registrar General's Table of Expectation for Liverpool, and that of the Expectation of Members of Friendly Societies in Liverpool . . 59
Equation and Expectation of Life among Trades in Friendly Societies compared . 90
Instability of Societies founded on the data given in Ansell . . 97—103, 126
How to ascertain the amount of Remuneration due to Medical Advisers of Friendly Societies 108
Rates and Contributions to . 111—139
Tables for the guidance of . 112—123
Present Condition of . . 132—134

GOVERNMENT—
Table of Expectation (Males) . . 37

GLASGOW— 72
Formation of Mortality Tables for . 78
Tables of Population, Deaths, and Mortality per cent. in . . . 79
Tables of Decrements, Mortality per cent., and Specific Intensity among males and females 80, 81
Remarkable Depreciation of Life in . 82
Comparison between the Liverpool and Glasgow Expectation . . 82—84
Table of Expectation—Males and Females . 83
Fluctuation of Deaths in . . 84
Higher Value of Female than Male Life in . 85
Value of Male Life in, compared with Liverpool and Dundee . . . 86

HIGHLAND SOCIETY—
Report of . . . 95—103

INTENSITY, SPECIFIC—
Nature of 7, 30
Tables of 5, 6, 25—28, 43—48, 57, 58, 73—76, 80, 81, 87, 88
Comparisons of . . 42, 49, 52, 72

LABOURERS—
RURAL DISTRICTS—MALES.
Table of Decrements, Mortality per cent., and Specific Intensity . . 43
Expectation of Life among . . 50

LIVERPOOL—
Expectation of Life among Friendly Societies in 36
Table of Decrements, Mortality per cent. among Males, Trades not Classified . 58
Employments in . . . 59
Table of Expectation of Life in Liverpool compared 59
Excessive Mortality in, not due to Locality merely 60

LIFE, DURATION OF—
In Various Classes . . . 13—62
Influence of Locality on . 10—12, 42
Influence of Employment on . 12—62
In Scotland . . . 63—90

LIFE, EQUATION OF—
In Rural, Town and City Districts . 49
Among Miners, Bakers, Plumbers Painters and Glaziers, and Clerks, in Rural, Town and City Districts . . . 55
Among Rural Districts in Scotland, and England 63
Comparisons between, in Glasgow, England and Wales, and Friendly Societies . 82
Same between, Dundee, Glasgow, and Friendly Societies 86
Nature of 89
Tables of, in England and Wales, Scotland, and Friendly Societies . . . 89, 90
Comparisons between Equation and Expectation of Life . . . 89, 90

LIFE, FEMALE—
Difference in value of, as shewn in the Registrar General's Table, the Carlisle Table, and Table D of this Volume . . 9
Rate of Mortality among Females, Members of Friendly Societies . . . 61, 62
Comparison between values of Male and Female Life 61
Higher value of Female than Male Life in Glasgow 85

LIFE, MALE—
The value of, among Members of Friendly Societies 33, 34
Comparison between Male and Female Life . 61
Value of, compared, in Dundee, Glasgow, and Liverpool 86

LIFE, EXPECTATION OF—
Difference in value between that given in Table D, and that in Fifth Report of the Registrar General . . . 7
Table of, in England and Wales . . 8
Comparison between Carlisle Table and Table D 9
Comparison of Differences in Tables . 31—34
Table of Expectation in Rural, Town and City Districts (Males) in Trades not Classified 32
Table of Expectation in Rural, Town and City Districts among Females in Friendly Societies 36
Table of Expectation in Liverpool among Males in Friendly Societies . . 36
Table of Expectation among Members of the Peerage 36
Same among Males of Sixteen Trades in Friendly Societies—Rural Districts . 37
Among Members of Life Assurance Offices . 37
And same among Government Males . 37
Comparison of, among Labourers in Rural Districts and the Rural Districts generally . 49
Table of Expectation among Labourers, Clerks, Plumbers Painters and Glaziers . 50

LIFE, EXPECTATION OF (*continued*)
Among Bakers, Miners, and Rural Districts after abstracting Labourers . . 51
Comparison between the Table of Expectation for Liverpool, as given in the Fifth Registrar General's Report, and that of the Members of Friendly Societies in Liverpool . 59
Comparison of, among Members of Friendly Societies in England and Scotland . 72
Table of Expectation in Scotland—Rural, Town, and City Districts . . 77
Comparison of, in Liverpool, Glasgow, and Dundee . . . . 82—86
Table of, Dundee and Glasgow . . 83
Comparison between Expectation and Equation Tables 89
Comparison between Tables of Annuities and Tables of Expectation of Life . 124—126
Various Tables of Expectation . . 140

LIFE, VALUE OF—
Among the Members of Friendly Societies 33-35, 38, 39
„ Peerage . . . 39
„ Lowest Classes . . 39, 40
„ Males and Females . . 61
Insufficiency of Inquiries respecting the relative values of Male and Female Life . 62

LOCALITY, INFLUENCE OF—
On the Duration of Life . . . 10
Means of Determining . . 11, 12, 24, 60
On Health 24
On Sickness . . . 91—110

MINERS—
Table of Decrements, Mortality per Cent., and Specific Intensity . . . 47
Expectation of Life among . . 51
Value of life among . . . 55, 56

MORTALITY—
Refutation of the theory, that Sickness and Mortality stand in relation to each other of cause and effect . . . 95
Rate of, per cent. during the years 1838, 1839, 1840, and 1841 in England and Wales . 4
Correct and Erroneous Modes of obtaining the average Mortality through the whole Kingdom . . . . 40—42
Rate of Mortality per cent. higher in Scotch than in English Cities . . . 72
Tables of the rate of, 5, 6, 25—28, 43—48, 57, 58, 73—76, 80, 81, 87, 88

ODD-FELLOW SOCIETIES—
Their Importance, Initiation Money, Contributions, and Instability . 132, 139

PAISLEY 72

PEERAGE, MEMBERS OF—
Table of Expectation of Life among . 36
Habits of, and Value of Life among . 39

PLUMBERS, PAINTERS AND GLAZIERS—
Table of Decrements, Mortality per cent., and Specific Intensity . . . 45

PLUMBERS, &c.—(*continued.*)
Expectation of Life among . . 50
Value of Life among . . . 55

ENGLAND AND WALES.
Census of the Population, and corrected Enumeration and Annual Rate of Increase . 1—4
Tables of . . . 16—23

SCOTLAND.
Tables of the Population . 64—71
Population of Glasgow for 1831 and 1841, with the Annual Rate of Increase during the intermediate period, with the sum of Deaths and Mortality per cent. . . 79
Populations of Dundee for the years 1835 to 1844, with the sum of the Deaths and Mortality per cent. . . . 85

PREMIUMS, TABLES OF—
For assuring Sum at Death . 115—117
For allowance during Sickness . 120—122

RECHABITE SOCIETIES—
Their Character, Contributions, and Instability . . . 138, 139

REPORTS—
Of the Registrar General . 1, 2, 7—11

SICKNESS—
Forms of Schedule for the collection of data 14, 15
Tables of, in Rural Districts (England) .
„ Town „ .
„ City „ 16—23
„ Rural (Scotland) .
„ Town „ .
„ City „ 64—71
Influence of Locality on . . 91—110
Average Amount of, per Annum, for each Person in England and Wales, and Scotland . 92
Amount of, compared, in Rural, Town, and City Districts . . . 93, 94
Refutation of the theory that Sickness and Mortality stand in relation to each other of cause and effect 95
Comparison of Tables from Ansell, Highland Society, and Table V of this Work . 96
Further comparison of Tables . . 98
Tables of Experience at different ages . 105
„ Premiums for Sickness . 120—122
Remarks on the Tables . . 127—131

STATISTICS, VITAL—
The frequent Errors in mode of inquiring as to 42
Cautions as to conducting inquiries . 60, 61

SCOTLAND—
Duration of Life in . . 63—90
Among Friendly Societies in, compared with those in England . . . 72
Non-extension of Registration Act to Scotland—cause of regret . . . 86
Equation and Expectation of Life in, compared 89
Average Sickness per annum to each person in 92

WALES—*See* "ENGLAND AND WALES."

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